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# CRUSTACEA

COMPILED BY

J. P. HARDING, Ph.D.

AND

R. W. INGLE

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# 10. CRUSTACEA

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27.—**André, M.** Le crabe chinois dans la Gironde. Nature, Paris No. 3231 1954 : 275.

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49.—**Balcells, E.** Sur des isopodes parasites de poissons. Vie et Milieu 4 3 1953 : 547-552 10 figs.

50.—**Balesdent-Marquet, M.-L.** Remarques sur le déterminisme de la poche incubatrice chez le crustacé Isopode *Asellus aquaticus* L. C.R. Acad. Sci. Paris 239 1954 : 1872-1874.

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53.—**Banner, A. H.** New records of Mysidacea and Euphausiacea from the Northeastern Pacific and adjacent areas. Pacif. Sci. 8 2 1954 : 125-139 3 figs.

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55.—**Barkley**, E. Nahrung und Filterapparat des Walkrebschens *Euphausia superba* Dana. Z. Fisch. Beiheft 1, Walforschung 1, Enhalt **IV** 1940 : 65-156 39 figs.

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62.—**Barnard**, K. H. South African shore life, Cape Town (Mashew Miller Ltd.) 1954 pp. 135 25 pls.

63.—**Barnard**, K. H. New records and a new species of crustacea from South Africa. Ann. Mus. Congo belg. N.S. 4to. Zool. **1** 1954 : 120-131 8 figs.

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69.—**Battaglia**, B. Notizie sistematiche e biometriche sul genere *Porcellidum* (Copepoda, Harpacticoida). Le popolazioni del Golfo di Napoli. Nota preliminare. Atti Ist. Veneto. Cl. Sci. mat. nat. **111** 1953 : 77-82.

70.—**Battaglia**, B. Microsistematica e analisi biometrica di popolazioni del genere *Porcellidium* (Copepoda, Harpacticoida).—Le popolazioni del Golfo di Napoli. Pubbl. Staz. zool. Napoli **25** 1954 : 112-134 4 figs.

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73.—**Behning**, A. L. Kladotsera Kavkaza. (Cladocera of the Caucasus). Tbilisi, 1941 : i-vii 1-384 ill. [In Russian].

74.—**Behre**, E. H. Decapoda of the Gulf of Mexico. Fish. Bull. U.S. **55** 1954 : 451-455.

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**82.**—**Birstein**, Y. A. Some problems of the origin and evolution of freshwater faunas. *Uspekhy sovrem. Biol.* [Progress in contemp. Biol.] **27** 1949 : 119-140.

**83.**—**Birstein**, Y. A. [Presence of *Niphargus* (Crustacea, Amphipoda) in the lowlands of Don and in the basin of Kuban]. *Zool. Zh., Moscow* **33** 5 1954 : 1025-1031 2 figs. [In Russian].

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**97.**—**Bolwig**, N. The influence of light and touch on the orientation and behaviour of *Gonodactylus glabrous* Brooks. *Brit. J. Anim. Behav.* **2** 1954 : 144-145 1 fig.

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**99.**—**Born**, A. El tramo de *Calymene tristani* en Almadén. *Publ. [alem.] extran. Geol. Exp.* **7** 3 1953 : 173-259 pls. 13-20.

**100.**—**Borutsky**, E. V. On the copepod fauna of Central Asia—*Attheyella* (*Attheyella*) *gladkovi* sp. n. *Zool. Zh., Moscow* **17** 1938 : 184-186 figs.

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**102.**—**Borutzky**, E. V. New species of *Ligidium* (Isopoda Terrestria) from Middle Asia. Bull. Soc. Nat. Moscow biol. **60** 1 1955 : 59–61 10 figs. [In Russian].

**103.**—**Borutzky**, E. V. On the geographical distribution of Copepods. I. The Genus *Arcticocamptus* Chappuis. Arch. Mus. zool. Univ. Moscow **7** 1951 : 153–161 figs. 1–10. [In Russian].

**104.**—**Borutzky**, E. V. Copepod fauna—Harpacticoida of the littoral-turbid zone of L. Baikal. Compt. Rend. [Doklady] Acad. Sci. U.S.S.R. **60** 1948 : 1593–1596 figs.

**105.**—**Borutzki**, E. V. [New species of Schizopera (Copepoda, Harpacticoida) from the Caspian Sea]. Zool. Zh., Moscow **32** 5 1953 : 848–852 fig. [In Russian].

**106.**—**Borutzki**, E. V. New species of the genus *Hemilepistus* (Isopode terrestria) from eastern Kazakhstan. Zool. Zh., Moscow **33** 2 1954 : 477–479 fig. [In Russian].

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**109.**—**Boschma**, H. Rhizocephala from Indo-China. III. Parasites from the coral *Podophthalmus vigil* (Fabricius). IV. Parasites of the crab *Charybdis feriata* (Linnaeus). Proc. Acad. Sci. Amst. **57C** 4 1954 : 365–389 18 figs.

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**112.**—**Bott**, R. Potamonidae (Crust. Decap.) von Angola. Publ. cult. Cia. Diamant. Angola. No. 16 1953 : 133–147 12 figs.

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**114.**—**Bott**, R. Dekapoden (Crustaceae) aus El Salvador I. Winkerkrabben (Uca). Senckenbergiana Biol. **35** 3–4 1954 : 155–180 6 pl. 23 figs.

**115.**—**Bouvier**, G. De quelques crustacés parasites des poissons d'eau douce de Suisse et du Brésil. Bull. Soc. Vaud. Sci. nat. **65** 283 1952 : 423–427 6 figs.

**116.**—**Bousfield**, E. L. Transport and concentration of planktonic stages of an estuarine barnacle. Trans. roy. Soc. Can. (3) **47** [6] 1953 : 171.

**117.**—**Božić**, B. Sur quelques copépodes harpacticoides des sable de Roscoff. Description de *Rhizothrix (Adelopoda) bocqueti*, n. sp. Arch. Zool. exp. gén. **91** 1953 : Notes et Rev. 17–24 figs.

**118.**—**Božić**, B. *Metacyclopsina roscensis* n. sp. copépode cyclopoidé des sables de Roscoff. Bull. Soc. zool. Fr. **78** 1954 : 403–408 4 figs.

**119.**—**Bradstock**, C. A. Biology of the marine spiny crayfish *Jasus lalandii* (Milne-Edwards) in New Zealand waters. Proc. 7th Pacif. sci. Congr. **4** 1953 : 504–506.

**120.**—**Braga**, J. M. Sur les asellus de l'Afrique du Nord. An. Fac. Ciênc. Pôrto **34** 1 1949 : 51–64 6 figs.

**121.**—**Braga**, J. M. Un *Synasellus* (Crust. Isopoda) Nouveau Du Portugal. Mem. Mus. Zool. Univ. Coimbra **223** 1954 : 1–10 13 figs.

**122.**—**Braun**, R. Zum Lichtsinn von *Phronima* (Amphipoda). Naturwissenschaften **40** 22 1953 : 586–587.

**123.**—**Braun**, R. Zum Lichtsinn von *Phronima* (Amphipoda). Naturwissenschaften **40** 1953 : 586–587.

**124.**—**Brehm**, V. Report No. 2 from Prof. Gislén's Expedition to Australia in 1951–1952. Bericht über Cladoceran und Copepoden. Lunds Univ. Årsskr. N.F. Avd. 2 **49** No. 7 1953 : 1–11 figs.

125.—**Brehm**, V. Contributions to the freshwater microfauna of Tasmania. Part 1—Copepoda. Part 2—Daphnidae, Bosminidae, Cytheridae, etc. Pap. roy. Soc. Tasm. **87** 1953 : 33–72 75 figs.

126.—**Brehm**, V. Nomenclatur-Breichtigung für zwei Diaptomiden. Öst. zool. Z. **4** 1954 : 419–420.

127.—**Brehm**, V. Sobre algunas hipótesis de la Hydrobiología actualmente invalidados. Publ. Inst. Biol. apl. **12** 1953 : 97–109. [Spanish with English summary].

128.—**Brehm**, V. Filópodos de Iran recolectados por el Dr. K. Lindberg. Publ. Inst. Biol. apl. **16** 1954 : 121–124 fig. [Spanish with German summary].

130.—**Brehm**, V. Bemerkungen zu den tiergeographischen Verhältnissen der indischen Süßwasser-Calanoiden. Öst. zool. Z. **4** 1953 : 402–418 maps.

131.—**Brehm**, V. Süßwasser-Entomostraken aus Cambodja. Öst. zool. Z. **5** 1954 : 273–280 4 figs.

132.—**Brehm**, V. *Pseudoboecella remotissima* n. sp. die erste Pseudo-boekella aus dem australischen Sektor der Antarkts. S.B. öst. Akad. Wiss. Abt. I **162** 7–8 1953 : 643–650 6 figs.

133.—**Brehm**, V. *Pseudodiaptomus batillipes* sp. nov. ein zweiten *Pseudodiaptomus* aus Madagascar. S.B. öst. Akad. Wiss. Math. nat. Kl. Abt. I **163** 1954 : 604–607.

134.—**Brehm**, V. Sobre los copepodos hallados por el Profesor Biraben en la Argentina. Neotropica **1** 1954 : 37–42 10 figs.

135.—**Brehm**, V. Les entomos-tracés des Kerguelen. Mém. Inst. Sci. Madagascar Ser. A **9** 1954 : 41–44 1 fig.

136.—**Brian**, A. and **Dartevelle**, E. Sur un Cirripède pédonculé des côtes d'Angola : *Octolasmis lowei* (Ch. Dar-win.). Ann. Mus. Congo belg. N.S. 4to. Zoo. **1** 1954 : 140–152 21 figs.

137.—**Broch**, H. Cirripedia Thor-acica. Dan. Ingolf-Exped. **3** Pt. 14 1953 : 1–17 12 figs.

**Brodie**, J. W. see Wellman & Brodie **836**.

138.—**Brodsky**, K. A. Free living copepoda of the Sea of Japan. Proc. Pacific Sci. Res. Inst. Fish. Oceanogr. **26** 1948 : 3–130 32 pls. [In Russian].

**Broekhuysen**, G. J. see Day, Millard, Broekhuysen & Harrison **201**.

139.—**Brook**, A. J. and **Rzöska**, J. The influence of the Gebel Aulyia Dam on the development of Nile plankton. J. Anim. Ecol. **23** 1954 : 101–114 3 figs.

140.—**Brown**, A. C. An addition to the South African Tanaidacea. Ann. Mag. nat. Hist. (12) **7** 1954 : 939–942 11 figs.

141.—**Brown**, F. A., **Bennett**, M. F. and **Webb**, H. M. Persistent daily and tidal rhythms of O<sub>2</sub> consumption in fiddler crabs. J. Cell. Comp. Physiol. **44** 3 1954 : 477–506 figs.

142.—**Brown**, F. A. Jr., **Finger-man**, M. and **Hines**, M. N. A study of the mechanism involved in shifting of the phases of the endogenous daily rhythm by light stimuli. Biol. Bull. Woods Hole **106** 1954 : 308–317 2 figs.

143.—**Brown**, F. A. Jr., **Webb**, H. M., **Bennett**, M. F. and **Sandeen**, M. I. Temperature independence of the frequency of the endogenous tidal rhythm of UCA. Physiol. Zool. **27** 1954 : 345–349 2 figs.

**Brown**, F. A. see Webb, Bennett & Brown **833**.

144.—**Brtek**, J. Príspevok k poznaniu rozšírenia niektorých pre fauna ČSR nových alebo málo zúčinných pontskaspických druhov živočíchov v dunají. Beitrag zur Erkenntnis der Verbreitung einzelner neuer oder wenig bekannter pontekaspischen Tierarten der tschechoslowakischen Republik in der Domäne Biologica, Bratislava **8** 4 1953 : 297–309 5 figs. [Russian and German summaries].

145.—**Buddenbrock**, W. v., **Moller-Racke**, I. and **Schaller**, F. Neue Experimente über die Augenstiellbewegungen von *Carcinus maenas*. Experientia **10** 8 1954 : 333–334 6 figs. [English summary].

146.—**Burke**, W. An organ for proprioception and vibration sense in *Carcinus maenas*. J. exp. Biol. **31** 1 1954 : 127–138 1 pl. 5 figs.

147.—**Bursell**, E. The transpiration of terrestrial Isopods. Abstr. Diss. Univ. Camb. **1950-51** 1953 : 27-28.

148.—**Bushby**, L. C. The Rubber Crab. Zoo Life **9** 1954 : 124-125 2 figs.

149.—**Butler**, P. M. The entomology of Spurn Peninsula. Other Invertebrates and Vertebrates : Crustacea Malacostraca. Naturalist No. 849 1954 : 75-76.

**Butler**, T. H. *see* Margolis & Butler **524**.

150.—**Buturović**, A. Isopodes nouveaux (Isop. terrestria) des grottes de Macédonie. Acta Mus. maced. Sci. nat. **1** 11 1954 : 233-254 27 figs.

151.—**Cadenat**, J. La collection de parasites de poissons de mer ouest africains de la Station de Biologie Marine de Gorée. Bull. Inst. franç. Afr. Noire **16A** 1 1953 : 300-301.

152.—**Cadenat**, J. Notes sur un copepode parasite de la sardinelle commune. Notes afr. No. 58 1953 : 60-61.

153.—**Cadenat**, J. and **Paraiso**, F. Noms vernaculaires des principales formes d'animaux marins et des lagunes du Togo et du Dahomey. Notes afr. No. 49 1951 : 24-29 2 figs.

154.—**Capart**, A. Revision des types des espèces de Potamidae de l'Afrique tropicale conservés au Muséum National d'Historie Naturelle de Paris. Vol. Jubil. Victor von Straelen, Bruxelles **2** 1954 : 819-847 43 figs.

155.—**Capra**, F. Il Granchio di Fiume, *Potamon edule* (Latr.) in Liguria. Doriana **1** No. 44 1953 : 1-7.

**Cardi**, Le V. *see* Beerstecker, Cormyn, Volkman, Cardi & Harker **72**.

156.—**Carlisle**, D. B. On the hormonal inhibition of moulting in decapod Crustacea. J. Mar. biol. Ass. U.K. **33** 1 1954 : 61-63.

157.—**Carlisle**, D. B. The X-organ-sinus gland complex, somatotropin, the ovarian inhibiting hormone and sex-reversal in *Lysmata* (Natantia, Hippolytidae). Pubbl. Staz. zool. Napoli **24** Suppl. 1954 : 79-80.

158.—**Carlisle**, D. B. Studies on *Lysmata seticaudata* Risso. Pubbl. Staz. zool. Napoli **25** 1954 : 241-245.

159.—**Carpenter**, C. C. A study of hibernacula and hibernating associations of snakes and amphibians in Michigan. Ecology **34** 1953 : 74-80.

160.—**Carter**, M. E. Studies on the postembryonic development of three species of harpacticoid copepods. Abstr. Diss. Univ. Virginia **1952** 1953 : 53-56. [Not seen].

161.—**Caspers**, H. Die Boden-tierwelt und Biologie des Hamburger Alsterbeckens und der Stadtkanäle (Quantitative Untersuchungen zur Kennzeichnung eines Stadtsees). Mitt. hamburg. Zool. Mus. **52** 1953 : 9-60 13 figs.

**Cassagnau**, P. *see* Coiffait, Cassagnau & Vandel **182**.

**Castro, Lemos de** *see* Lemos de Castro **486-487**.

162.—**Čehovíc**, G. Effet stimulant des gonadotrophines de mammifères sur la reproduction des daphnies. C.R. Acad. Sci. Paris **239** 1954 : 363-365.

163.—**Čehovíc**, G. Analyse de l'effet stimulant des gonadotrophines de Mammifères sur la reproduction des Daphnies. C.R. Acad. Sci. Paris **239** 1954 : 722-724.

164.—**Chabaud**, A. G. & **Bignet**, J. Sur les mécanismes d'infestation des copépodes par les cercaires de trématodes hémiuroïdes. Variations suivant les espèces. C.R. Acad. Sci. Paris **239** 1954 : 1087-1089 figs.

165.—**Chace**, F. A. Stomatopoda. Fish. Bull. U.S. **55** 1954 : 449-450.

166.—**Chace**, F. A. Jr. Two new subterranean shrimps (Decapoda : Caridea) from Florida and the West Indies, with a revised key to the American species. J. Wash. Acad. Sci. **44** 10 1954 : 318-324 2 figs.

167.—**Chandler**, A. Causes of variation in the haemoglobin content of Daphnia (Crustacea : Cladocera) in nature. Proc. zool. Soc. Lond. **124** 1954 : 625-630 3 figs.

168.—**Chappuis, P. A.** Sur deux genres d'Asellides aberrants : *Stygasellus* et *Synasellus* (Crust. Isop.). Bull. Soc. Sti. Cluj **10** 2 1948 : 282-286 4 figs.

169.—**Chappuis, P. A.** Nouveaux crustaces troglobies de l'Italie du Nord. Mem. Mus. civ. Stor. nat. Verona **4** 1954 : 1-12 32 figs.

170.—**Chappuis, P. A.** Nouveaux harpacticoides de la nappe phréatique de l'Adige. Mem. Mus. civ. Stor. nat. Verona **4** 1954 : 157-162.

171.—**Chappuis, P. A.** *Delamarella arenicola*, n. g. n. sp. copépode intestinier des plages du Roussillon (Note préliminaire). Vie et Milieu **4** 1 1954 : 111-113 1 fig.

172.—**Chappuis, P. A.** Harpacticides psammiques récoltés par C. Delamere Deboutteville en Méditerranée. Vie et Milieu **4** 2 1953 : 254-276 71 figs.

173.—**Chappuis, P.-A.** Un nouvel isopode psamminque du Maroc: *Microcerberus remyi*. Vie et Milieu **4** 4 1953 : 659-663 14 figs.

174.—**Chappuis, P. A.** Recherches sur les crustacés souterrains iv. Copépodes psammiques des plages du Roussillon. Arch. Zool. exp. gén. **91** 1954 : 35-50 11 figs.

175.—**Chappuis, P. A. and Delamare Deboutteville, C. L.** Recherches sur les Crustacés Souterrain VII. Les Isopodes (Première série) Psammiques de la Méditerranée. Arch. Zool. exp. gén. **91** 1954 : 103-138 15 figs.

**Chappuis, P. A.** see Delamare Deboutteville & Chappuis **211-214**.

176.—**Charniaux-Cotton, H.** Action hormonale des ovaires sur un caractère sexuel secondaire chez *Orchestia gammarella*. Bull. Soc. zool. Fr. **78** 1954 : 337.

177.—**Charniaux-Cotton, H.** Implantation de gonades de sexe opposé à des mâles et des femelles chez un crustacé amphipode (*Orchestia gammarella*). C.R. Acad. Sci. Paris **238** 1954 : 953-955 1 fig.

178.—**Charniaux-Cotton, H.** Découverte chez un crustacé Amphipode (*Orchestia gammarella*) d'une glande endocrine responsable de la différen-

ciation de caractères sexuels primaires et secondaires mâles. C.R. Acad. Sci. Paris **239** 1954 : 780-782.

179.—**Cheylan, G., Magné, J., Sigal, J., et Grekoff, N.** Résultats géologiques et micropaléontologiques du sondage d'El Krachem (Hauts-Plateaux algériens). Description de quelques espèces nouvelles. Bull. Soc. géol. Fr. **63** 4-6 1953 : 471-492 fig. 1-2 tables.

**Clarke, E.**, see Koshland & Clarke **452**.

180.—**Cloudsley-Thompson, J. L.** Problems of dispersal in some terrestrial arthropods. Advanc. Sci., Lond. **11** 41 1954 : 73-75.

181.—**Cloudsley-Thompson, J. L.** The ecological significance of diurnal rhythms in terrestrial arthropods. Sci. Progr. **42** 165 1954 : 46-52.

182.—**Coiffait, H., Cassagnau, P. and Vandel, A.** Contribution à la connaissance de la faune cavernicole et endogée du Liban (Mission H. Coiffait au Liban, 1951). Mém. Mus. nat. Hist. nat. Paris **5** 1954 : 141-169 figs.

183.—**Cole, G. A.** Notes on the calanoid and cyclopoid Copepoda of the Louisville region. Trans. Kentucky Acad. Sci. **14** 1 1953 : 6-9. [Not seen].

**Conat, M.** see Schachter & Conat **697**.

184.—**Conti, L.** Stratigrafia e Paleontologia della Val Solda (Lago di Lugano). Appendice. Ostracodi e foraminiferi hettangiana della Val Solda. Mem. Carte geol. ital. **30** 1954 : 1-248 pls. 1-13 text-figs. 1-52.

**Cormyn, J.** see Beerstecher, Cormyn, Volkman, Cardi & Harker **72**.

185.—**Cornubert, G.** Influence de l'ablation des pédoncules oculaires sur la mue du crabe *Pachygrapsus marmoratus* Fabricius parasite par *Sacculina carcinis* Thompson. Bull. Inst. océanogr. Monaco No. 1039 1954 : 1-4.

186.—**Cornubert, G.** Notes préliminaire sur l'existence de caractères sexuels externes périodique chez les femelles du crabe *Pachygrapsus marmoratus*. Bull. Inst. océanogr. Monaco No. 1050 1954 : 1-7 3 figs.

**187.**—**Cornubert**, G. Effets de l'ablation des pédoncules oculaires sur la ponte des femelles du crabe *Pachygrapsus marmoratus* Fabricius. C.R. Acad. Sci. Paris **238** 1954 : 952–953.

**188.**—**Crisp**, D. J. The breeding of *Balanus porcatus* (da Costa) in the Irish Sea. J. Mar. biol. Ass. U.K. **33** 2 1954 : 473–496 10 figs.

**189.**—**Crisp**, D. J. and **Barnes**, H. The orientation and distribution of barnacles at settlement with particular reference to surface contour. J. Anim. Ecol. **23** 1954 : 142–162 6 figs.

**Crisp**, D. J. *see* Jones & Crisp **415**, Southward & Crisp **746**.

**190.**—**Cunningham**, B. T., **Moar**, N. T., **Torrie**, A. W. & **Parr**, P. J. A survey of the western coastal dune lakes of the North Island, New Zealand. Aust. J. mar. & freshw. Res. **4** 2 1953 : 343–386 2 pls. 12 figs.

**191.**—**Cuvillier**, J. Niveaux à coprolithes de Crustacés. Bull. Soc. géol. Fr. **6** 4 1–3 1954 : 51–54 pl. 4.

**192.**—**Dahl**, E. Reports of the Lund University Chile Expedition 1948–49. 15. Stomatopoda. Acta Univ. lund. N.F. **49** 17 1954 : 1–12 figs.

**193.**—**Dahl**, E. A collection of Amphipoda from the Ross Sea. Ark. Zool. **7** 1954 : 281–293 41 figs.

**194.**—**Dahl**, E. On the distribution and origin of the deep sea bottom fauna. Inter. union. biol. sci. **B** 16 1954 : 43–48.

**195.**—**Dahl**, E. Frontal organs in free-living copepods. K. fysivgr. Sällsk. Lund Förh. **23** 1954 : 32–38 4 figs.

**196.**—**Dahl**, E. Some aspects of the ecology and zonation of the fauna on sandy beaches. Oikos **4** 1 1953 : 1–27 8 figs.

**Dahmer**, G. *see* Simon & Dahmer **739**.

**197.**—**Dakin**, W. J., **Bennett**, I and **Pope**, E. Australian seashores. A guide for the beach-lover, the naturalist, the shore fisherman, and the student, London (Angus & Robertson), 1953, pp. xii + 372 frontis. col. 99 pls.

**198.**—**Daniel**, A. *Conchoderma indicum* n. sp. a pedunculate cirripede from Krusadi Islands. J. zool. Soc. India **5** 1953 : 235–238 1 fig.

**199.**—**Danois**, E. Le. La vie étrange des rivages marins, Paris (Horizons de France) 1953 pp. 192 96 pls. (16 col.) text illust.

**Dartevelle**, E. *see* Brian & Dartevelle **136**.

**200.**—**Daum**, J. Zur Biologie einer Isopodenart unterirdischer Gewässer : *Caecosphaeroma (Vireia) burgundum* Dollfus. Ann. Univ. Saraviensis **3** 1–2 1954 : 104–160 10 pls. 12 figs.

**Daum**, J. *see* Husson & Daum **399**.

**200a.**—**Davis**, G. H., III. The contact between the Maulius limestone and the Coeymaus limestone in Upper New York State. Circ. N.Y. St. Mus. No. 35 1953 : 1–31.

**201.**—**Day**, J. H., **Millard**, N. A. H., **Brockhuysen**, G. J. and **Harrison**, A. D. The ecology of South African estuaries. Part IV : The St. Lucia system. Part V : Richard's Bay. Trans. roy. Soc. S. Afr. **34** 1 1954 : 129–179 4 pls. 2 figs.

**202.**—**Dearolf**, K. The invertebrates of 75 caves in the United States. Proc. Pa. Acad. Sci. **27** 1953 : 225–239.

**203.**—**Debaissieux**, P. Histogenèse des muscles et charpentes chez les crustacés. Cellule **56** 1954 : 265–305 4 pls.

**Demand**, J. *see* King & Demand **434**.

**204.**—**Delamare Deboutteville**, C. Recherches sur les crustacés souterrains (Première Série). III. Le développement postembryonnaire des Mystacocarides. Arch. Zool. exp. gén. **91** 1954 : 25–34 8 figs.

**205.**—**Delamare Deboutteville**, C. Au sujet des *Bathynella* de France. Vie et Milieu **4** 1 1953 : 116–121 3 figs.

**206.**—**Delamare Deboutteville**, C. Recherches sur l'écologie et la répartition du mystacocaride *Derocheillocaris remanei* Delamare et Chappuis en Méditerranée. Vie et Milieu **4** 3 1953 : 321–380 23 figs.

**207.—Delamare Deboutteville, C.** Revision des mystacocarides du genre *Derocheilocaris* Pennak et Zuin. Vie et Milieu **4** 3 1953 : 459–469 5 figs.

**208.—Delamare Deboutteville, C.** La faune des eaux souterraines littorales en Algérie. Vie et Milieu **4** 3 1953 : 470–503 14 figs. map.

**209.—Delamare Deboutteville, C.** Une espèce nouvelle de Parabathynella natale à Madagascar : *Parabathynella pauliani* n. sp. Diagnose préliminaire. Vie et Milieu **4** 4 1953 : 747.

**210.—Delamare Deboutteville, C.** Présence du genre *Bathynella* dans les cours souterrain du Tech. Vie et Milieu **4** 4 1953 : 749.

**211.—Delamare Deboutteville, C.** and **Chappuis, P. A.** Recherches sur les crustacés souterrains (Première Série) II. Morphologie des Mystacocarides. Arch. Zool. exp. gén. **91** 1954 : 7–24 10 figs.

**212.—Delamare Deboutteville, C.** L. and **Chappuis, P. A.** Recherches sur Les Crustacés Souterrains (Première Série). V. Les Bathynella de France et d'Espagne. Arch. Zool. exp. gén. **91** 1954 : 51–82 figs.

**213.—Delamare Deboutteville, C.** and **Chappuis, P. A.** Recherches sur Les Crustacés Souterrains (Première Série) VI. Révision des Genres *Parabathynella* Chappuis et *Thermonbathynella* Capart. Arch. Zool. exp. gén. **91** 1954 : 83–102 11 figs.

**214.—Delamare Deboutteville, C.** and **Chappuis, P. A.** Les bathynelles de France et d'Espagne avec diagnoses d'espèces et de formes nouvelles. (Note préliminaire). Vie et Milieu **4** 1 1954 : 114–115.

**215.—Delamare Deboutteville, C.** and **Mochado, A. de B.** Présence de la sous-classe des Mystacocarides (Crustacea) sur les côtes de l'Angola. Publ. cult. cia. Diamont. Angola No. 23 1954 : 119–123 10 figs.

**216.—Delamare Deboutteville, C.** and **Nunes-Ruivo, L. P.** Parasites de poissons des mer ouest africains récoltés par J. Cadenat. II.—Copépodes (1re note) genres *Lernanthropus*, *Sagara*, *Paeon*, *Pennella*. Bull. Inst. franç. Afr. Noire **16A** 1 1953 : 139–166 16 figs.

**217.—Delamare Deboutteville, C.** and **Nunes-Ruivo, L.** Copepodes parasites des poissons Méditerranéens (3e Serie). Vie et Milieu **4** 2 1953 : 201–218 9 figs.

**218.—Delamare Deboutteville, C.** L. and **Ruffo, S.** Recherches sur les Crustacés Souterrain (Première Serie) VIII. Une Nouvelle *Salentinella* Ruffo (Amphipode Gammaridae) des eaux phréatiques de corse. Arch. Zool. exp. gén. **91** 1954 : 139–144.

**Delamare Deboutteville, C.** see Chappuis & Delamare Deboutteville 175.

**219.—Demeusy, N. and Lenel, R.** Effet de l'ablation des pédoncules oculaires sur la fréquence de la ponte chez *Carcinus maenas* Pennant. C.R. Soc. Biol., Paris **148** 1954 : 156–158.

**220.—Dexter, R. W.** Studies on North American fairy shrimps with the description of two new species. Amer. midl. Nat. **49** 3 1953 : 751–772 3 figs.

**221.—Dexter, R. W.** A record of the blind isopod, *Asellus tridentatus* from an open stream habitat. Amer. Midl. Nat. **52** 1 1954 : 256.

**222.—Dexter, R. W.** A bloom of nauplius larvae. Amer. Midl. Nat **52** 2 1954 : 512.

**223.—Dexter, R. W.** Fouling organisms attached to the American lobster in Connecticut waters. Ecology **36** 1 1954 : 159–160.

**224.—Dexter, R. W.** An anomalous appendage on the carapace of the American lobster. Ohio J. Sci. **54** 3 1954 : 192–194 2 figs.

**225.—Dexter, R. W.** An unusual pearl from a freshwater mussel and a pearl-like growth from a crayfish. Ohio J. Sci. **54** 4 1954 : 241–242 1 fig.

**226.—Dietz, R.** Multiple Geschlechtschromosomen bei dem ostracoden *Notodromas monacha*. Chromosoma **6** 5 1954 : 397–418 10 figs.

**227.—Digby, P. S. B.** The biology of the marine planktonic copepods of Scoresby Sound, East Greenland. J. Anim. Ecol. **23** 1954 : 298–338 16 figs.

**Dineen, C. F.** see Peckham & Dineen **617**.

**Ditmar**, V. I. *see* Mordovski & Ditmar 571.

**228.—Doebl**, F. Mikrofaunistische Untersuchungen an der Grenze Rupelton—Schleichsand (Mitteloligozän) im Mainzer Becken. Notizbl. hess. Landesamt. Bodenforsch. **82** 1954 : 57–111 1 pl. 10 figs.

**229.—Dogiel**, V. A. and **Akhmarov**, A. Kh. Parasitic crustacea of fishes in the R. Amur. Sci. Adv. Univ. Leningrad. [Uchen. Zapisk. L.G.U.] No. 141 1952 : 268–294 figs. 14–20. [In Russian].

**230.—Dollfus**, R. P. Parasites animaux de la morue atlanto-arctique *Gadus callarias* L. Encycl. biol. **43** 1953 : 1–428 266 figs.

**231.—Dollfus**, R. H. Métacercaire progénétique de *Derogenes* (Trematoda Hemiuroidea) chez un copépode parasite de poisson. Vie et Milieu **5** 4 1954 : 565–568 1 fig.

**232.—Dorier**, A. and **Vaillant**, F. Observations et expériences relatives à la résistance au courant de divers invertébrés aquatiques. Trav. Lab. Hydrobiol. Grenoble **45–46** 1954 : 9–31 2 pls.

**233.—Dougherty**, E. C. and **Steinberg**, J. E. Notes on the skeleton shrimps (Crustacea : Caprellidae) of California. Proc. biol. Soc. Wash. **66** 1953 : 39–49.

**Dow**, T. *see* Moore, Owre, Jones & Dow 569.

**234.—Drach**, P. and **Forest**, J. Description et répartition des *Xantho* des mers d'Europe. Arch. Zool. exp. gén. **90** 1953 : 1–36 24 figs.

**235.—Duchateau**, G. and **Florkin**, M. Sur la composition de l'arthropodine et de la scleroprotéine cuticulaires de deux crustacés décapodes (*Homarus vulgaris* Edwards, *Callinectes sapidus*, Rathbun). Physiol. comp. **3** 1954 : 365–369.

**236.—Dunbar**, M. J. The amphipod crustacea of Ungava Bay, Canadian Eastern Arctic. J. Fish. Res. Bd. Can. **11** 1954 : 709–798 42 figs.

**Durand**, D. E. *see* Bliss, Durand & Welsh 89.

**237.—Dzvelaya**, M. F. and **Maglaperidze**, K. S. [New data on Guriisk layers of Western Georgia]. C.R.

Acad. Sci. URSS n.s. **96** 1 1954 : 155–157. [In Russian].

**238.—Eberly**, W. R. The Terrestrial isopods (Oniscoidea) of Indiana. Proc. Ind. Acad. Sci. **63** 1954 : 272–277.

**239.—Echalier**, G. Recherches expérimentales sur le rôle de "l'organe Y" dans la mue de *Carcinus moenas* (L.). C.R. Acad. Sci. Paris **238** 1954 : 523–525.

**Echalier**, G. *see* Arvy, Echalier & Gabe 42.

**240.—Eckert**, B. Der orientierende Einfluss polarisierten Lichtes auf Daphnia. Czech. Biol. **2** 2 1953 : 78–83 2 figs. [German summary].

**241.—Edmondson**, C. H. Hawaiian Portunidae. Occ. Pap. Bishop Mus. **21** 12 1954 : 217–274 44 figs.

**242.—Edmondson**, C. H. Substitute for an invalid generic name in the Crustacea. Pacif. Sci. **8** 3 1954 : 368.

**243.—Edmondson**, C. H. A survey of marine wood borers in the Pacific by the United States Navy. Proc. 7th Pacif. sci. Congr. **4** 1953 : 519–529 1 fig.

**244.—Edmondson**, C. H. Timbers of unusual resistance to marine borers in Hawaiian waters. Proc. 7th Pacif. sci. Congr. **4** 1953 : 529–533.

**245.—Edney**, E. B. Woodlice and the land habitat. Biol. Rev. **29** 2 1954 : 185–219 3 figs.

**Edney**, E. B. *see* Spencer & Edney 748.

**246.—Egorova**, L. N. New data on distribution of Ostracods in the deposits of Zhivetz layer. C.R. Acad. Sci. URSS. **94** 3 1954 : 537–540. [In Russian].

**247.—Eliassen**, E. The physiology of the vascular system of invertebrates. I. A monograph on the blood-pigments, their physical-chemical qualities, distribution, and physiological importance. Univ. Bergen Arb. **1953** 11 1954 : 1–66 25 figs.

**248.—Ellis**, B. F. and **Messina**, A. R. Catalogue of Ostracoda. **4** 1954 : 537 362 text-figs. **5** 1954 : 544 356 text-figs. (also contains corrections and additions for previous vols.).

**249.**—**Elster, H.-J.** Über die Populations dynamik von *Eudiaptomus gracilis* Sars und *Heteropece borealis* Fischer in Bodensee-Obersee. Arch. Hydrobiol. Suppl. **20** 4 1954 : 546-614 9 figs.

**250.**—**Enami, M.** The functional significance of beta-neurosecretory cells in *Sesarma*. Pubbl. Staz. zool. Napoli **24** Suppl. 1954 : 70-71.

**Enami, M.** see Waterman & Enami 830.

**251.**—**Erichson, S. J.** Effects of weather-conditions on the Turtle Creek Plankters near Dallas, Texas. Field & Lab. **21** 4 1953 : 133-143 4 graphs.

**Evans, J.** see Koch, Evans & Schicks 449.

**252.**—**Evens, F.** Étude sur le plancton du rivier de Hamme (Belgique). Biol. Jaarb. **21** 1954 : 47-197.

**253.**—**Fage, L.** Les amphipodes pélagiques du genre *Rhabdosoma*. C.R. Acad. Sci. Paris **239** 1954 : 661-663 1 fig.

**254.**—**Fahrenbach, W.-H.** A new species of the genus *Diarthrodes* (Crustacea, Coopoda) parasitic in a red Alga. J. Wash. Acad. Sci. **44** 10 1954 : 326-329 9 figs.

**255.**—**Farfante, I. P.** Los camarones comerciales de Cuba. Mem. Soc. cubana Hist. nat. **21** 2 1953 : 229-243 maps.

**256.**—**Fautrez, J.** and **Fautrez-Firlefyn, N.** La teneur en acide desoxyribonucleique des cellules de l'ovaire d'*Artemia salina* L. Biol. Jaarb. **20** 1953 : 127-132 1 fig.

**257.**—**Fautrez, J.** and **Fautrez-Firlefyn, N.** Deoxyribonucleic acid content of the cell nucleus and mitosis. Nature, Lond. **172** 1953 : 119-120.

**258.**—**Fautrez-Firlefyn, N.** and **Fautrez, J.** Etude cytologique et cytochimique du spermatozoïde d'*Artemia salina* L. Ire partie : Les grains réfringents, leur signification et leur origine. Arch. Biol. Paris **65** 1954 : 497-530 1 pl. 2 figs.

**259.**—**Félice, P. de.** Mission Scientifique de l'Omo. Isopodes

terrestres. Mém. Mus. nat. Hist. nat. Paris N.S. **19** 2 1945 : 331-344 28 figs.

**260.**—**Feyling-Hanssen, R. W.** The barnacle *Balanus balanoides* (Linné, 1766) in Spitsbergen. Skr. norsk Polarinist. No. 98 1953 : 1-64 9 pls. 15 figs.

**261.**—**Figueroa, M. C.** Descripcion del espermatoforo de *Penaeus stylostris* Stimpson. Rev. Soc. mex. Hist. nat. **13** 1952 : 35-43 3 figs.

**262.**—**Filteau, G.** and **Tremblay, J.-L.** Ecologie de *Calanus finmarchicus* dans la Baie de Chaleurs. Nat. canad. **80** 1-2 1953 : 5-80 16 figs.

**Fingerman, M.** see Brown, Hines & Fingerman 142.

**263.**—**Fischbach, E.** Licht, Schwere und Geruchssinn bei Isopoden. Zool. Jb. (Allg. Zool.) **65** 1954 : 141-170 5 figs.

**264.**—**Fish, C. J.** and others. Symposium on marine and freshwater plankton in the Indo-Pacific. Bangkok (Indo Pacific Fisheries Council) 1954, pp. xi + 111 text illust.

**265.**—**Fisher, D. W.** and **Rickard, L. V.** Age of the Brayman shale. Circ. N.Y. St. Mus. No. 36 1953 : 1-14 1 fig.

**266.**—**Fisher, L. R., Kon, S. K.** and **Thompson, S. Y.** Vitamin A and carotenoids in certain invertebrates. II. Studies of seasonal variations in some marine Crustacea. J. Mar. biol. Ass. U.K. **33** 3 1954 : 589-612 4 figs.

**267.**—**Fize, —.** Cas de malformation d'un chélipède de Paguridae. Bull. Mus. nat. Hist. nat. Paris (2) **26** 2 1954 : 220-225 1 fig.

**Fleming, C. A.** see Wellman, Reed, Fleming & Hornibrook 837.

**268.**—**Florey, E.** and E. Über die mögliche Bedeutung von Enteramin (5-Oxy-Tryptamin) als nervöser Ak-tionssubtranz bei Cephalopoden und Decapoden Crustaceen. Z. Naturf. **9B** 1 1954 : 58-68 8 figs.

**269.**—**Florey, E.** Über die Wirkung von 5-Oxytryptamin (Enteramin) in der Krebsschere. Z. Naturf. **9B** 8 1954 : 540-547 8 figs.

**Florkin, M.** see Duchâteau & Florkin 235.

**270.**—**Flückiger, E.** Die Wirkung der Sympathomimetica und Dihydroergotamin auf Daphnien. I. Wirkung auf Muskelfunktionen. II. Wirkung auf Stoffwechsel. Acta Physiol. scand. **27** 1952 : 206–216 2 figs. **30** 1 1953 : 33–44 4 figs. [Not seen].

**Fomina, E. V.** see Samoilova, Smirnova & Fomina **691**.

**271.**—**Fontes, E. M.** Un nuevo huésped del *Anthosoma crassum* (Abd.) en el Mar Argentino (Crustacea : Copepoda). Physis **20** 57 1949 : 185–187 1 fig.

**272.**—**Fontes, E. M.** Dos interesantes hallazgos para la fauna de Buenos Aires : *Apus* y *Dendrocephalus* en el Banado de Flores (Crust.-Phyll.). Physis **20** 57 1949 : 188.

**273.**—**Forest, J.** Les paguristes des côtes occidentales et méridionales d'Afrique. Ann. S. Afr. Mus. **41** 4 1954 : 159–213 1 pl. 70 figs.

**274.**—**Forest, J.** Crustacés Décapodes Marcheurs des îles de Tahiti et des Tuamotu.—II. Scyllaridea. Bull. Mus. Hist. nat., Paris **21** (2) 3 1954 : 345–352 2 figs.

**275.**—**Forest, J.** Sur un Pagure littoral nouveau de la Martinique, *Paguristes cadenati* sp. nov. Bull. Mus. nat. Hist. nat., Paris **21** (2) 3 1954 : 353–357 3 figs.

**276.**—**Forest, J.** Crustacés décapodes marcheurs des îles de Tahiti et des Tuamotu—I. Paguridea. Bull. Mus. nat. Hist. nat. Paris (2) **25** 6 1953 : 555–561 5 figs.

**277.**—**Forest, J.** Crustacés décapodes marcheurs des îles de Tahiti et des Tuamotu.—I. Paguridea. Bull. Mus. nat. Hist. nat. Paris (2) **26** 1 1954 : 71–79 10 figs.

**278.**—**Forest, J.** Sur les premiers stades post-larvaires des pagure *Dardanus pestinatus* (Ortmann). C.R. Acad. Sci., Paris **239** 1954 : 1697–1699 figs. 1–3.

**279.**—**Fourmanoir, P.** Crabes de la côte Ouest de Madagascar. Nat. malgache. **6** 1–2 1954 : 1–16 12 figs.

**280.**—**Frentz, R.** Quelques données biométriques sur la population de *Carcinus maenas* Pennant de l'étang de

Thon. Bull. Inst. oceanogr. Monaco No. 1035 1954 : 1–26 I–XXIV 2 figs.

**281.**—**Frentz, R.** Électrophorese sur papier des protéines du sérum de *Carcinus maenas* Pennant. C.R. Acad. Sci. Paris **239** 1954 : 1867–1868.

**282.**—**Fryer, G.** The occurrence of *Gammarus lacustris* G. O. Sars, and *Gammarus pulex* (L.) in Malham Tarn, and a note on their morphological differences. Naturalist No. 847 1953 : 155–156 2 figs.

**283.**—**Fryer, G.** Contributions to our knowledge of the biology and systematics of the freshwater Copepoda. Schweiz. Z. Hydrol. **16** 1 1954 : 64–77 2 figs.

**284.**—**Fryer, G.** and **Smyly, W.-J. P.** Some remarks on the resting stages of some freshwater Cyclopoid and Harpacticoid Copepods. Ann. Mag. nat. Hist. (12) **7** 1954 : 65–72.

**Fuchs, H.** see Kuhn & Fuchs **465**.

**Fukuda, M.** see Nishizawa & others **686**.

**285.**—**Fullwood, P. D.** A survey of the parasitic copepods infesting fish in Dallas County, Texas. Abstr. Thes. Sth. Meth. Univ. No. 14 [1953] : 4.

**286.**—**Gabe, M.** Sur l'existence d'un cycle sécrétatoire dans la glande de sinus (organe pseudofrontal) chez *Oniscus asellus* L. C.R. Acad. Sci. Paris **235** 1952 : 900–902.

**Gabe, M.** see Echalier, Arvy & Gabe **42**.

**287.**—**Galliford, A. L.** Notes on the freshwater organisms of Lundy with special reference to the Crustacea and Rotifera. Rep. Lundy Fld. Soc. No. 7 [1954] : 29–35 2 pls.

**288.**—**Garcia, I.** and **Grangaud, R.** Sur les pigments caroténoides de *Maja squinado*. C.R. Soc. Biol., Paris **147** 1953 : 433–434.

**289.**—**Gauthier, M.** Anomalie de l'artère sternale chez *Potamobius leptodactylus* Esch. Trav. Lab. Hydrobiol. Grenoble **45–46** 1954 : 49–53 3 figs.

**290.**—**George, C. J., Reuben, N.** and **Muthe, P. T.** The blood-vascular system of *Panulirus polyphagus* (Herbst). J. Anim. Morph. Physiol. **1** 1954 : 17–25 5 figs.

**291.**—**George, J. C. and Shah, V. C.** A note on the muscle fat of the lobster *Panulirus polyphagus* (Herbst) and the prawn *Palaemon carcinus* (Henderson and Mathai). *J. Anim. Morph. Physiol.* **1** 1954 : 61.

**292.**—**George, J. C. and Shah, V. C.** A comparative study of the chemical composition of the muscle of the lobster *Panulirus polyphagus* (Herbst) and the prawn *Palaemon carcinus* (Henderson and Mathai). *J. Anim. Morph. Physiol.* **1** 1954 : 69–70.

**293.**—**George, R. W. and Sheard, K.** Ecdysis in the isopod *Porcellio scaber* (Latreille). *Aust. J. Zool.* **2** 1954 : 75–85 2 pls. 4 figs.

**294.**—**Gerlach, A.** Das Supralitoral der sandigen Meeresküsten als Lebensraum einer Mikrofauna. *Kieler Meeresforsch.* **10** 1954 : 121–129 2 pls.

**295.**—**Gilchrist, B. M.** Haemoglobin in *Artemia*. *Proc. roy. Soc. 143B* 910 1954 : 136–146 1 fig.

**296.**—**Gill, E. D.** Catalogue of quaternary types and figured specimens in the National Museum, Melbourne. *Mem. nat. Mus., Melb.* No. 18 1953 : 157–168 1 pl.

**297.**—**Glauert, L.** Occurrence of *Hyperoedipes plumosus*. *W. Aust. Nat. 38* 1953 : 197.

**Gislén, Prof. see Brehm 124.**

**298.**—**Gmitter, T. E. and Wotton, R. M.** Crabs from the island of St. Thomas. *Proc. Pa. Acad. Sci.* **27** 1953 : 261–272 18 figs.

**299.**—**Gnanamuthu, C. P.** Two new sand-dwelling isopods from the Madras sea-shore. *Ann. Mag. nat. Hist. (12)* **7** 1954 : 257–274 6 figs.

**300.**—**Gnanamuthu, C. P.** Three lernaeid copepods parasitic on Indian fishes. *J. Parasit.* **39** I 1953 : 14–21 2 pls.

**301.**—**Gnanamuthu, C. P.** *Chonio-sphaera indica*, a copepod parasitic on the crab *Neptunus* sp. *Parasitology* **44** 1954 : 371–378 29 figs.

**302.**—**Goldman, M. and Wells, P. H.** Crayfish—reddening effect of vertebrate adrenal cortical extract. *Science* **120** 1954 : 350–351.

**303.**—**Golubtsov, V. K.** [The lower Carboniferous deposits of Yeks (Pripetz Polesie)]. *C.R. Acad. Sci. URSS. n.s.* **97** I 1954 : 133–135. [In Russian].

**304.**—**Gopalakrishnan Nair, S.** Two new species of *Irona* (Isopoda) parasitic on Madras fishes. *Proc. Indian sci. Congr.* **38** 3 [1952] : 213.

**305.**—**Gordon, I.** Dr. William Thomas Calman. *Proc. Linn. Soc. Lond.* **165** I 1954 : 83–87.

**306.**—**Gordon, I.** On a rare xanthid crab from Western Australia. *W. Aust. Nat.* **4** 5 1954 : 97–104 3 figs.

**307.**—**Gordon, M.** Shrimp from the desert. *Anim. Kingd.* **57** 1954 : 43–46 5 figs.

**308.**—**Gotto, R. V.** A copepod new to the British Isles and others hitherto unrecorded from Irish coastal waters. *Irish Nats. J.* **11** 5 1954 : 133–135.

**309.**—**Gotto, R. V.** *Lichomolgides cuanensis* n.g., n. sp., an ascidicolous copepod occurring in *Trididemnum tenerum* (Verrill). *Parasitology* **44** 1954 : 379–386 20 figs.

**310.**—**Gotto, R. V.** On *Mycophilus roseus* Hesse, and other notodelphyoid copepods from Strangford Lough, Co. Down. *Proc. Zool. Soc. Lond.* **124** 1954 : 659–668 5 figs.

**311.**—**Graizer, M. I., Obruchev, D. V., and Sokolskaya, A. N.** [New data on the age of Bistriyannic strata of the lower Carboniferous of Minuninsk ravine]. *C.R. Acad. Sci. URSS. n.s.* **98** 5 1954 : 825–828. [In Russian].

**312.**—**Green, J.** Size and reproduction in *Daphnia magna* (Crustacea : Cladocera). *Proc. Zool. Soc. Lond.* **124** 1954 : 535–545 6 figs.

**Grekoff, N. see Cheylan, Magné, Sigal & Gregoff 179.**

**313.**—**Grosser, B. I., Baylor, E. R. and Smith, A. E.** Analysis of geotactic responses in *Daphnia magna*. *Ecology* **34** 4 1953 : 804–805.

**314.**—**Gruner, H.-E.** Über das Coxalglied der Pereiopoden der Isopoden. *Zool. Anz.* **152** 1954 : 312–317 10 figs.

315.—**Gryaznov**, V. I. [The signs of sublittoral conditions in formation river bed facia of the Nikopol manganese deposits]. C.R. Acad. Sci. URSS. n.s. **96** 1 1954 : 151–154 2 figs. [In Russian].

316.—**Guiler**, E. R. Some collections of Caprellids from Tasmania. Ann. Mag. nat. Hist. (12) **7** 1954 : 531–553 20 figs.

317.—**Guiler**, E. R. The intertidal zonation at two places in Southern Tasmania. Pap. roy. Soc. Tasm. **88** 1954 : 105–118 1 pl. fig.

318.—**Gunter**, G. Sagacity of a crab. Science **120** 1954 : 188–189.

319.—**Gunter**, G. and **Hildebrand**, H. H. The relation of total rainfall of the state and catch of the marine shrimp (*Penaeus setiferus*) in Texas waters. Bull. mar. Sci. Gulf & Caribbean **4** 2 1954 : 95–103.

320.—**Guryanova**, E. F. [New supplements to the Far Eastern fauna of marine gammarids]. Trav. Inst. zool. Acad. Sci. URSS. **13** 1953 : 216–241 19 figs. [In Russian].

321.—**Haget**, M. Observations sur la croissance "prénatale" de *Daphnia pulex* (Crustacé Cladocère). P.V. Soc. Sci. phys. nat. Bordeaux **1946–48** [1952] : 118–121.

322.—**Hale**, H. M. Australian Cumacea. No. 13. The family Lampropidae. Trans. roy. Soc. S. Aust. **70** 1 1946 : 178–188 4 figs.

323.—**Hale**, H. M. Two new Cumacea from South Africa. Trans. roy. Soc. S. Aust. **76** 1953 : 45–50 4 figs.

324.—**Hale**, H. M. Australian Cumacea No. 18. Notes on distribution and night collecting with artificial light. Trans. roy. Soc. S. Aust. **76** 1953 : 70–76 3 figs.

**Hamon**, M. see Rose & Hamon **679**.

325.—**Hand**, C. A blue crayfish from California. Calif. Fish Game **40** 1954 : 437–438.

326.—**Hara**, J. On the effects of extracts of eyestalk of the grapsoid crab *Sesarma picta* and of head of the pill bug, *Armadillidium vulgare*, upon heart beat of the shrimp, *Paratya compressa*. Annot. zool. jap. **25** 1952 : 411–414.

327.—**Harding**, J. P. The first known example of a terrestrial Ostracod, *Mesocypris terrestris* sp. nov. Ann. Natal Mus. **12** 3 1953 : 359–365 17 figs.

328.—**Harding**, J. P. The copepod *Thalestris rhodymeniae* (Brady), and its nauplius, parasitic in the seaweed *Rhodymenia palmata* (L.) Grev. Proc. Zool. Soc. Lond. **124** 1954 : 153–161 1 pl. 24 figs.

329.—**Hardy**, A. C. and **Bainbridge**, R. Experimental observations on the vertical migrations of plankton animals. J. Mar. biol. Ass. U.K. **33** 2 1954 : 409–448 2 pls. 29 figs.

**Harker**, R. see Beerstecher, Cormyn, Volkman, Cardi & Harker **72**.

**Harrison**, A. D. see Day, Millard, Brockhusen & Harrison **201**.

330.—**Hart**, J. F. L. Northern extensions of range of some reptant decapod crustacea of British Columbia Canad. Fld. Nat. **67** 3 1953 : 139–140.

331.—**Hartmann**, G. Ostracodes des eaux souterraines de la Méditerranée et de Majorque. Vie et Milieu **4** 2 1953 : 238–253 6 figs.

332.—**Hartmann**, G. Les ostracodes de la zone d'algues de l'eulittoral de Banyuls. Vie et Milieu **4** 4 1953 : 608–614 2 figs.

333.—**Hartmann**, G. Les ostracodes du sable à Amphioxus de Banyuls. Vie et Milieu **4** 4 1953 : 648–658 5 figs.

334.—**Hartmann**, G. Ostracodes des étangs Méditerranéens. Vie et Milieu **4** 4 1953 : 707–712 1 fig.

335.—**Hartmann**, G. Neue Polycopidae (Ostracoda : Cladocopa) von europäischen Küsten. Kieler Meeresforsch. **10** 1954 : 84–99 11 pls.

336.—**Hartmann**, G. Zwei neue Polycop—Arten (Ostracoda, Cladocopa) aus Brasilien. Zool. Anz. **153** 1954 : 175–182 22 figs.

337.—**Hartog**, C. D. Immigration, dissemination and ecology of *Elminius modestus* Darwin in the North Sea, especially along the Dutch Coast. Beaufortia **4** 33 1953 : 9–20 3 figs.

338.—**Harvey**, E. N. Bioluminescence, N.Y. 1952 pp. i–xvi 1–649 187 figs.

339.—**Hassan**, M. Y. Tertiary faunas from Kap Brewster, East Greenland. Medd. Grönland **111** 5 1953 : 1-42 5 pls. 1 fig.

340.—**Hassenstein**, B. Studi sulla *Lysmata seticaudata* Risso. VII. Ueber die Sehschärfe von Superpositionssaugen. (Versuche an *Lysmata seticaudata* und *Leander serratus*). Pubbl. Staz. zool. Napoli **25** 1954 : 1-8 1 pl. 4 figs.

341.—**Heldt**, H. and J. Les crustacés comestibles des mers tunisiennes et leur pêche. Ann. Sta. océanogr. Salammbo No. 9 1954 : 1-16 10 pls.

342.—**Heldt**, J. H. *Palaemonetes varians* (Leach) (Crustacé Décapode) au Lac Kelbia. Cas de poecilogonie dans une même nappe d'eau. Bull. Sta. océanogr. Salammbo No. 44 1953 : 1-14 4 figs.

343.—**Heldt**, J. H. Contribution à l'étude de la biologie des pénéides. Bull. Sta. océanogr. Salammbo No. 47 1954 : 1-27 map.

344.—**Heldt**, J. H. Note sur quelques petits Crustacés Ichthyophages. Bull. Soc. Sci. nat. Tunis **5** 1952 : 111-113 2 pls.

345.—**Heldt**, J. H. Stades larvaires d'*Aristeomorpha foliacea* (Risso) et *Aristeus antennatus* (Risso), Décapodes Pénéides. C.R. Acad. Sci. Paris **239** 1954 : 1080-1082.

346.—**Heldt**, J. H. Contribution à l'étude de la faune carcinologique du Lac de Tunis. Bull. Soc. Sci. nat. Tunis **6** 1954 : 99-102.

347.—**Heldt**, J. H. La Grégarine de la Crevette Caramote (*Penaeus kerathurus*). Bull. Soc. Sci. nat. Tunis **6** 1954 : 103-112 pls. IV-XIII.

348.—**Heldt**, J. H. and **Vénéque**, R. Nouvelle station à *Potamon edulis* (Latreille) (Crabe d'eau douce) en Tunisie. Bull. Soc. Sci. nat. Tunis **5** 1952 : 151-153 1 pl.

349.—**Hemming**, F. Proposed use of the plenary powers to validate the family group name *Xanthinae* Dana, 1851. Bull. zool. Nomencl. **9** 1954 : 329-331.

350.—**Hemming**, F. Proposed validation, under the plenary powers, of the family group names *Processidae*

and *Upogebiinae*. Bull. zool. Nomencl. **9** 1954 : 340-341.

351.—**Hemming**, F. and **Holthuis**, L. B. Proposed modification of the application submitted to the International Commission on Zoological Nomenclature regarding the generic name *Euryrhynchus* Miers, 1877. Bull. zool. Nomencl. **6** 1954 : 367-369.

352.—**Hemsen**, J. Ergebnisse der österreichischen Iran-Expedition 1949/50. Cladocera und freilebende Copepoden der Kleingewässer und des Kaspisees. SitzBer öst. Akad. Wiss. Abt. I **161** 8 1952 : 585-644 72 figs.

353.—**Henningsmoen**, G. Lower Ordovician Ostracods from the Oslo region, Norway. Norsk geol. Tidsskr. **33** 1-2 1954 : 41-69 text-fig. 1 pls. 1-2.

354.—**Henningsmoen**, G. Upper Ordovician Ostracods from the Oslo region, Norway. Norsk geol. Tidsskr. **33** 1-2 1954 : 70-108 text-figs. 1-5 pls. 1-6.

355.—**Henningsmoen**, G. Silurian Ostracods from the Oslo region, Norway. I. Beyrichiacea. With a revision of the Beyrichiidae. Norsk geol. Tidsskr. **34** 1 1954 : 14-71 text-figs. 1-5 pls. 1-8.

356.—**Henry**, D. P. Cirripedia : the barnacles of the Gulf of Mexico. Fish. Bull. U.S. **55** 1954 : 443-446.

357.—**Henson**, E. B. *Pontoporeia affinis* var. *brevicornis* in Cayaga Lake, N.Y. Ecology **35** 4 1954 : 579.

358.—**Herbert**, M. R. The tolerance of oxygen deficiency in the water by certain Cladocera. Mem. Ist. ital. Idrobiol. de Marchi **8** 1954 : 97-107 2 figs.

359.—**Herold**, W. Die Landisopoden der Schwäbischen Alb. Mitt. zool. Mus. Berl. **30** 1954 : 3-11.

360.—**Hewer**, A. M. An interesting crab. Tasm. Nat. **2** 2 1951 : 34.

361.—**Hildebrand**, H. H. A study of the fauna of the brown shrimp (*Penaeus aztecus* Ives) grounds in the Western Gulf of Mexico. Publ. Inst. mar. Sci. Univ. Tex. **3** 1954 : 233-366.

**Hildebrand**, H. H. see Gunter & Hildebrand **319**.

**Hill**, B. L. *see* Morris & Hill 572.

**Himms**, J. M. *see* Blaschko & Himms 88.

**362.—Hines**, M. N. A tidal rhythm in behavior of melanophores in autotomized legs of *Uca pugnax*. Biol. Bull. Wood's Hole **107** 1954 : 386-396 5 figs.

**Hines**, M. N. *see* Brown, Fingerman & Hines 142.

**363.—Hinton**, H. E. Resistance of the dry eggs of *Artemia salina* L. to high temperatures. Ann. Mag. nat. Hist. (12) **7** 1954 : 158-160.

**364.—Hirosaki**, Y. Studies on life-history of some cladocerans. Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 32 1953 : 84-91 1 fig. [Japanese with English summary].

**365.—Hirosaki**, Y. Cladocera collected in the neighbourhood of Halodate and Sapporo, Hokkaido. Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 32 1953 : 91. [Japanese with English summary].

**Hirosaki**, Y. *see* Mawatari, Hirosaki & Kobayashi 546.

**366.—Hirschmann**, H. and **Partsch**, K. Die Karpfenlaus (Überarbeitung von *Argulus pellucidus* Wagler). Mikrokosmos **43** 10 1954 : 217-223, figs. 1-20.

**367.—Hobbs**, H. H., Jr. The epizootic associates of the crayfishes of the New River system with particular reference to the ostracods. J. Tenn. Acad. Sci. **28** 3 1953 : 180-181.

**368.—Hobbs**, Jr., H. H. A redescription of *Procambarus ruthveni* (Pearse) from La Laja Creek at Cuatotlapam, Veracruz, Mexico. (Decapoda, Astacidae). Occ. Pap. Mus. Zool. Univ. Mich. No. 559 1954 : 1-5 9 figs.

**369.—Hobbs**, H. H., Jr. A new crayfish of the genus *Procambarus* from Alabama and Florida (Decapoda, Astacidae). Proc. biol. Soc. Wash. **66** 1953 : 173-178 1 pl.

**370.—Hobbs**, H. H., Jr. A new crayfish from the Upper Coastal Plain of Georgia (Decapoda, Astacidae). Quart. J. Fla. Acad. Sci. **17** 2 1954 : 110-118 13 figs.

**371.—Hobbs**, H. H., Jr. Notes on the evolution of the *longulus* group of the crayfish genus *Cambarus*. Va. J. Sci. N.S. **5** 4 1954 : 261.

**372.—Hoestlandt**, H. Recherches complémentaires sur le polychromatisme de populations de *Sphaeroma serratum* le long des côtes d'Irlande. C.R. Acad. Sci. Paris **238** 1954 : 2360-2362 map.

**Hoestlandt**, H. *see* Bocquet, Levi & Hoestlandt 92.

**373.—Holdhaus**, K. Die Spuren des Eiszeit in der Tierwelt Europas. Abh. zool.-bot. Ges. Wien **18** 1954 : 1-493 51 pls. map.

**374.—Hollwedel**, W. Die Wasserflöhe (Cladocera) des Sagar Meeres. II. Teil. Beitr. Naturk. niedersachs. **6** 4 1953 : 46-56, 117-128, 4 pls.

**375.—Holthuis**, L. B. Strandwerkgemeenschap koninklijke Natuurhist. Vereniging Nederland Jeugdb. Natuurstudie. **13** 1954 : 2, 8 figs.

**376.—Holthuis**, L. B. Enumeration of the decapod and stomatopod Crustacea from Pacific coral islands. Atoll Res. Bull. No. 24 1953 : 1-66 2 maps.

**377.—Holthuis**, L. B. Proposed addition to the *Official list of generic names in zoology* of the generic name *Xantho* Leach, 1814. Bull. zool. Nomencl. **9** 1954 : 270-271.

**378.—Holthuis**, L. B. Proposed use of the plenary powers to validate the generic name *Discias* Rathbun 1902. Bull. zool. Nomencl. **9** 1954 : 332-333.

**379.—Holthuis**, L. B. Proposed use of the plenary powers to validate the generic names *Upogebia* Leach, 1814, and *Processa* Leach, 1815. Bull. zool. Nomencl. **9** 1954 : 334-340.

**380.—Holthuis**, L. B. The names of the European species of the genus *Xantho* Leach, 1814 (Crustacea Decapoda Brachyura). Proc. K. Akad. Amst. **57C** 1 1954 : 103-107.

**381.—Holthuis**, L. B. On a collection of decapod crustacea from the Republic of El Salvador. Zool. Verh. No. 23 1954 : 1-43 2 pls. 15 figs.

382.—**Holthuis**, L. B. G. S. Rafinesque as a carcinologist, an annotated compilation of the information on crustacea contained in the works of that author. Zool. Verh. No. 25 1954 : 1-43 4 figs.

**Hopkins**, H. S. *see* Shanes & Hopkins 720.

383.—**Hornibrook**, N. de B. A note on the Ostracoda *Limnocythere mowbrayensis* Chapman 1914, and *L. sicula* Chapman 1919. Mem. nat. Mus., Melb. No. 18 1953 : 155-156 1 pl.

384.—**Hornibrook**, N. de B. Origin and affinities of New Zealand marine ostracods. Rep. 7th sci. Congr. N.Z. 1953 : 99.

385.—**Hornibrook**, N. de B. Marine Ostracoda in Post-Jurassic stratigraphy in New Zealand. Rep. 7th sci. Congr. N.Z. 1953 : 142.

386.—**Hornibrook**, N. de B. Some New Zealand Tertiary marine Ostracoda useful in stratigraphy. Trans. roy. Soc. N.Z. 81 2 1953 : 303-311 21 figs.

**Hornibrook**, N. de B. *see* Wellman, Reed, Fleming & Hornibrook 839.

**Horvath**, A. *see* Abrahám, Bende, Horvath & Megyeri 12.

387.—**Hoshi**, T. Studies on physiology and ecology of plankton. X. A relation between oxygen content in medium, incubation period of animal and glycogen content of the daphnia, *Simocephalus vetulus*, kept under anaerobic conditions. Sci. Rep. Tōkoku Univ. (4) 20 3 1954 : 260-264.

388.—**Hoshina**, T. and **Suenaga**, G. On a new species of parasitic copepod from Yamame (Salmonoid fish) of Japan. J. Tokyo Univ. Fish 41 1954 : 75-78 1 pl. 4 figs.

389.—**Hotchkiss**, N. Wildlife abstracts 1935-51. An annotated bibliography of the publications abstracted in the Wildlife Review Nos. 1-66. Washington D.C. (U.S. Fish & Wildlife Service) 1954 pp. iv + 434.

390.—**Howard**, H. W. The genetics of *Armadillidium vulgare* Latr. III. Dominant and recessive genes for red body colour. J. Genet. 51 2 1953 : 259-269.

391.—**Hughes**, H. Photograph of *Ranina*. Austr. Mus. Mag. 11 2 1953 : Front cover.

392.—**Humes**, A. G. The specific validity of *Epischura massachusettsensis* Pearse (Copepoda : Calanoida). Amer. Midl. Nat. 52 1 1954 : 154-158 20 figs.

393.—**Humes**, A. G. *Tisbe celata* n. sp., a Harpacticoid Copepod from the mantle cavity of the edible mussel in New Brunswick. J. Fish. Res. Bd. Can. 11 1954 : 816-826 32 figs.

394.—**Hurley**, D. E. Studies on New Zealand amphipodan fauna. No. 6. Family Colomastigidae, with descriptions of two new species of *Colomastix*. No. 7. The family Corophiidae, including a new species of *Paracorophium*. Trans. roy. Soc. N.Z. 82 2 1954 : 419-460 10 figs.

395.—**Hurley**, D. E. Studies on the New Zealand Amphipodan fauna No. 9. The families Acanthonotozomatidae, Pardaliscidae and Liljeborgiidae No. 10. A new species of *Cacao*. Trans. roy. Soc. N.Z. 82 3 1954 : 763-811 17 figs.

396.—**Hurley**, D. E. Studies on the New Zealand amphipoden fauna. No. 2. The family Talitridae : the freshwater genus *Chiltonia* Stebbing. No. 3. The family Phoxocephalidae. No. 4. The family Gammaridae, including a revision of the freshwater genus *Phreatogammarus* Stebbing. No. 5. *Pleonexes lessoniae*, a new species of the family Amphithoidae. Trans. roy. Soc. N.Z. 81 4 1954 : 563-626 14 figs.

397.—**Huron**, R. and **Matsakis**, J. La formule d'allométrie et la croissance chez les isopodes terrestres. C.R. Acad. Sci. Paris 238 1954 : 2028-2030.

398.—**Husson**, R. Recherches histochimiques des phosphatasés alcalines chez l'amphipode *Niphargus virei* Chevreux. Ann. Sci. nat. (Zool.) (11) 15 1954 : 361-368 1 pl.

399.—**Husson**, R. and **Daum**, J. Sur le dimorphisme sexuel des maxillipèdes de *Caecosphaeroma burgundum* et sa signification physiologique. C.R. Acad. Sci. Paris 238 1954 : 2121-2123.

**400.**—**Hynes, H. B. N.** The ecology of *Gammarus duebeni* Lilljeborg and its occurrence in fresh water in western Britain. *J. Anim. Ecol.* **23** 1954 : 38–84 11 figs.

**401.**—**Hynes, H. B. N.** Identity of *Gammarus tigrinus* Sexton 1939. *Nature, Lond.* **174** 1954 : 563.

**Imai, T.** see Murachi & Imai **576.**

**402.**—**Imaizumi, R.** *Thalassina anomala* (Herbst) from Japan. Short Pap. Inst. Geol. Tôkoku Univ. **5** 1953 : 67–76 pl. 9.

**403.**—**Imaizumi, R.** *Callianassa layawai* n. sp from Saipan. Short Pap. Inst. Geol. Tôkoku Univ. **5** 1953 : 77–83 pls. 10–11.

**404.**—**Imaizumi, R.** Notes on *Bathynomus* sp. (Crustacea) from the Miocene of Japan. Short Pap. Inst. Geol. Tôkoku Univ. **5** 1953 : 84–86 pl. 12.

**Inoue, N.** see Nishizawa & others **886.**

**Jackson, D. F.** see Tryon & Jackson **796.**

**405.**—**Jacobson, C.-S.** Om marin-glaciale reliker i dalsländskasjöar. Fauna og Flora **49** 5–6 1954 : 218–228 2 figs.

**406.**—**Jakobi, H.** Novos *Laophontidae* (Copepoda—Crustacea) da costa Brasileira. (Neue Laophontiden von der Brasilianischen Kueste). *Dusenia* **4** 1 1953 : 47–60 figs.

**407.**—**Jakobi, H.** Neue Tegastiden (Harpacticoids—Copepoda) von der Kueste Santa Catarinas (Brasilien). *Dusenia* **4** 2 1953 : 173–180 2 figs.

**408.**—**Jakobi, H.** Biologie, Entwicklungsgeschichte und Systematik von *Bathynella natans* Vejd. *Zool. Jb. Syst.* **83** 1954 : 1–62 25 figs.

**409.**—**Jančářík, A.** Contribution to the knowledge of the genus *Cyclocypris* Ostracoda with the description of one new species. *Přírod. Sborn. Ostravsk. Kraje* **10** 1 1949 : 1–26 2 figs. 2 maps.

**410.**—**Jančářík, A.** Knálezu skorepatu *Herpetocypris reptans* u Lázné Jeseníku. *Přírod. Sborn. Ostravsk. Kraje* **13** 1–2 1952 : 211–215 11 figs.

**411.**—**Jančářík, A.** A study of two Ostracoda species *Cypricerus affinis*

and *Cypricerus hirsutus*. *Přírod. Sborn. Ostravsk. Kraje* **15** 4 1954 : 425–437 figs. [English summary].

**412.**—**Jespersen, P.** On the quantities of macroplankton in the North Atlantic. *Medd. Danm. Fisk. Havundersog.* **1** No. 2 1954 : 1–12 14 figs.

**413.**—**Johnson, M. W.** Studies on plankton of the Bering and Chukchi seas and adjacent seas. *Proc. 7th. Pacif. sci. Congr.* **4** 1953 : 480–500 7 figs.

**414.**—**Jolivet, P.** Anthropodes récoltés à Cabrera. *Vie et Milieu* **4** 3 1953 : 553–555 map.

**Jones, E. C.** see Moore, Owre, Jones & Dow.

**415.**—**Jones, L. W. G.** and **Crisp, D. J.** The larval stages of the Barnacle *Balanus improvisus* Darwin. *Proc. Zool. Soc. Lond.* **123** 1954 : 765–780 6 figs.

**416.**—**Joubert, F. J.** Haemocyanin of the crayfish (*Jasus Lalandii*). *Biochem. & Biophys. Acta* **14** 1 1954 : 127–135 5 figs. [Not seen].

**417.**—**Kado, Y.** The seasonal change of plankton and hydrography of the neighbouring sea of Mukaishima. *J. Sci. Hiroshima Univ. (Zool.)* **15** 1954 : 193–204 5 figs.

**418.**—**Kaj, J.** *Caligus lacustris* Stp. et Ltk. a new freshwater parasitic copepod of Poland. *Polsk. Arch. Hydrobiol.* **1** 1954 : 45–48 1 fig. [English summary].

**419.**—**Kalmus, H.** Sun navigation by animals. *Nature, London* **173** 1954 : 657–658.

**420.**—**Kämpfe, L.** and **Kittel, R.** Eine zoologische Fangreise in das Nordmeer, zugleich ein Beitrag zur Fauna der Barent-Sea. *Wiss. Z. Univ. Halle, Math.-nat. R.* **2 VIII** 4 1953 : 463–469 8 figs.

**421.**—**Karaman, S. L.** Über die *Jaera*-arten Jugoslaviens. *Acta adriat.* **5** 5 1953 : 1–20 34 figs.

**422.**—**Karaman, S. L.** Die Niphargiden des Slovenischen Karstes, istriens sowie des benachb., Italiens. *Acta Mus. Maced. Sci. Nat.* **11** 8/1954 : 159–180 figs.

423.—**Karaman**, S. L. Über die Jugoslavischen Stenasellus-Arten. Frag. Balcanica. Mus. Mac. Sci. Nat. 1 No. 2 1954 : 7-20.

424.—**Karaman**, S. L. Die Amphipoden Kleinasiens. I. Teil—Niphargus. Posebna Izd. Nauk prir. mat. N.S. No. 2 1950 : 33-45 18 figs. [German summary].

425.—**Karaman**, S. L. Über unsere unterirdische Fauna. Acta Mus. Maced. Sci. nat. 19 1954 : 195-216 figs.

426.—**Karamchandani**, S. J. A new species of *Ergasilus* from the gills of *Labeo bata* Hamilton. Rec. Indian Mus. 50 1953 : 287-293 1 fig.

427.—**Kelly**, J. W. Metachromasy in the eggs of fifteen lower animals. Protoplasma 43 4 1954 : 329-346 5 figs.

428.—**Kennedy**, G. Y. and **Vevers**, H. G. The occurrence of porphyrins in certain marine invertebrates. J. Mar. biol. Ass. U.K. 33 3 1954 : 663-676 1 fig.

429.—**Kesling**, R. V. Ornamentation as a character in specific differentiation of Ostracods. Contr. Mus. Geol. Univ. Mich. 12 2 1954 : 13-21 pls. 1-2.

430.—**Key**, A. J. Some recent Ostracoda of Manila (Philippines). Proc. Acad. Sci. Amst. 57B 3 1954 : 351-363 3 pls. 1 fig.

431.—**Kiefer**, F. Eine kleine Cyclopiden—Ausbeute aus norditalienischen subterraneengewässern. Mem. Mus. civ. Stor. nat. Verona 4 1954 : 163-165 7 figs.

432.—**Kiefer**, F. Drei neue Ruderfusskrebsen (Crust. Cop.) aus Venezuela. Zool. Anz. 153 1954 : 170-174 11 figs.

433.—**Kiefer**, F. Neue Cyclopoida Gnathostoma (Crust. Cop.) aus Madagaskar. Zool. Anz. 153 1954 : 308-313 12 figs.

434.—**King**, J. E. and **Demond**, J. Zooplankton abundance in the Central Pacific. Fish. Bull. U.S. 54 1953 : 111-144 11 figs.

435.—**King**, L. A Miocene marine fauna from Zululand. Trans. geol. Soc. S. Afr. 56 1953 : 59-91 pls. 8-12 text-figs. 1-15.

436.—**Kinne**, O. Zur Biologie und Physiologie von *Gammarus duebeni* Lillj. VIII : Die Bedeutung der Kopulation für Eiablage und Häutungsfrequenz. Biol. Zbl. 73 3-4 1954 : 190-202 4 figs.

437.—**Kinne**, O. Eidonomie, Anatomie und Lebenszyklus von *Sphaeroma hookeri* Leach (Isopoda). Kieler Meeresforsch. 10 1954 : 100-120 10 pls.

438.—**Kinne**, O. Interspezifische Sterilpaarung als Konkurrenzökologischer Faktor bei Gammariden (Crustacea, Peracarida). Naturwissenschaften 41 18 1954 : 434.

439.—**Kinne**, O. Die Gammarus Arten der Kieler Bucht. (*G. locusta*, *G. oceanicus*, *G. salinus*, *G. zaddachi*, *G. duebeni*). Zool. Jb. Syst. 82 1954 : 405-424 6 figs.

440.—**Kinne**, O. Zur Biologie und Physiologie von *Gammarus duebeni* Lillj. Z. wiss. Zool. 157 1954 : 427-491 17 figs.

441.—**Kinne**, O. Experimentelle Untersuchungen über den Einfluss des Salzgehaltes auf die Hitzeresistenz von Brackwassertieren. Zool. Anz. 152 1954 : 10-16.

442.—**Kitazawa**, Y. and **Kurasawa**, H. Studies on the biological production of Lake Suwa III. The horizontal stratification of Zoobenthos. Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 27 1952 1-6.

443.—**Kitazawa**, Y., **Kurasawa**, H. and **Shiraishi**, Y. Studies on the biological production of Lake Suwa. IV. The stratification, the seasonal succession and the standing crop of zooplankton. Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 27 1952 : 1-6, 29-39 6 figs. No. 28 1952 : 98-106.

**Kitazawa**, Y. see Kurasawa, Kitazawa & Shiraishi 443.

**Kittel**, R. see Kämpfe & Kittel 420.

444.—**Klekowski**, R. Étude des ostracodes (Ostracoda) des eaux continentales salées et sulfuriques. Prace Łódz. Tow. Nauk (111) No. 19 1952 : 1-36 2 pls. 4 figs. [Polish, with French and Russian summaries].

445.—**Knowles**, F. G. W. Endocrine activity in the crustacean nervous system. Proc. roy. Soc. 141B 909 1953 : 248-267 3 pls. 9 figs.

**446.**—**Knowles**, F. G. W. Neurosecretion in the tritocerebral complex of crustaceans. *Pubbl. Staz. zool. Napoli* **24** Suppl. 1954 : 74–78.

**447.**—**Knox**, G. A. The intertidal ecology of Taylor's Mistake, Banks Peninsula. *Trans. roy. Soc. N.Z.* **81** 2 1953 : 189–220 2 pls. 8 figs.

**Kobayashi**, S. *see* Mawatari, Hiro-saki & Kobayashi **546**.

**448.**—**Koch**, H. J. L'intervention de cholinestérases dans l'absorption et le transport actif de matières minérales par les branchies du crabe *Eriocheir sinensis* M.E. *Arch. int. physiol.* LXII 1 1954 : 136.

**449.**—**Koch**, H. J., **Evans**, J. and **Schicks**, E. The active absorption of ions by the isolated gills of the crab *Eriocheir sinensis* (M. Edw.). *Med. Kon. Akad. Weten.* **XVI** 5 1954 : 1–16 figs.

**450.**—**Koepcke**, H.-W. y M. Contribucion al conocimiento de la forma de vida de *Ocypoda gaudichaudii* Milne Edwards et Lucas. *Publ. Hist. nat. Javier Prado Zool.* No. 13 1953 : 1–46 14 figs.

**451.**—**Komárek**, J. Werkunft der Süßwasser-Endemiten der dinarschen Gebirge, Revision der Arten, Artenstehung bei Höhlentieren. *Arch. Hydrobiol.* **48** 3 1953 : 269–349 2 figs.

**Kon**, S. K. *see* Fisher, Kon & Thompson **266**.

**Konno**, K. *see* Senō & Konno **716**.

**452.**—**Koshland**, D. E., Jr. and **Clarke**, E. Mechanism of hydrolysis of adrenosintrophosphate catalysed by lobster muscle. *J. biol. Chem.* **205** 2 1953 : 917–924. [Not seen].

**453.**—**Krishnan**, G. Tyrosinase activity in relation to phenolic tanning of the cuticle in *Carcinus maenas*. *Proc. nat. Inst. Sci. India* **20** 2 1954 : 157–169 2 figs.

**454.**—**Krishnaswamy**, S. A new species of Harpacticoid copepod from Madras. *Zool. Anz.* **152** 1954 : 88–92 3 figs.

**455.**—**Klenova**, M. V. [Geological structure of Apsheron sill of the Caspian Sea]. *C.R. Acad. Sci. URSS.* n.s. **94** 2 1954 : 311–314. [In Russian].

**456.**—**Koryakov**, E. A. [New findings of Copepoda parasita on Baikal fish]. *C.R. Acad. Sci. URSS.* n.s. **99** 4 1954 : 657–659 3 figs. [In Russian].

**Kovalevski**, S. A. *see* Viktorova & Kovalevski **823**.

**457.**—**Kozloff**, E. N. and **Whitman**, D. C. *Entocythere occidentalis* sp nov., a Cytherid Ostracod Commensal on Western species of *Pacifastacus*. *Amer. Midl. Nat.* **52** 1 1954 : 159–163 13 figs.

**Krau**, L. *see* Oliveira & Krau **603**.

**458.**—**Krishnaswamy**, S. A note on parasites of free-living copepods of Madras. *Proc. Indian Sci. Congr.* **38** 3 [1952] p. 213.

**459.**—**Krog**, J. The influence of seasonal environmental changes upon the metabolism, lethal temperature and rate of heart beat of *Gammarus linnaeus* (Smith) taken from an Alaskan lake. *Biol. Bull. Woods Hole* **107** 1954 : 397–410 5 figs.

**460.**—**Krämmelbein**, K. Eine Ostrakoden-Fauna aus der Riff-Einlagerung im Plattenkalk der Paffrather Mulde (Givetium, Bergisches Land). *Senckenbergiana* **34** 4–6 1954 : 247–258 2 pls.

**461.**—**Krämmelbein**, K. Devonische Ostracodes aus der Gegend von Buchan und von der Küste der Waratah Bay, Victoria, Australien. *Senckenbergiana Lethaea* **35** 3–4 1954 : 193–229 5 pls. 2 figs.

**462.**—**Kubo**, I. On two Penaeids, *Metapenaeus affinis* (H. Milne-Edwards) and *M. burkenroadi*, nom. nov. erected on the Japanese form known as *M. affinis*. *J. Tokyo Univ. Fish.* **41** 1954 : 89–93 2 figs.

**462a.**—**Kubo**, I. On the Palinurid lobsters. *J. Tokyo Univ. Fish.* **41** 1954 : 95–105 4 pls. 3 figs.

**463.**—**Kubo**, I. and **Morishita**, K. On the fishery, stock, and conservation of the prawn, *Pandalus kessleri* in the Notsuke Bay, Hokkaido. *Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 33* 1954 : 32–46 9 figs.

**464.**—**Kühl**, H. Über das Auftreten von *Elminius modestus* Darwin in der Elbmündung. *Helgoland. wiss. Meeresunters.* **5** 1954 : 53–56 2 figs.

465.—**Kuhn, O. and Fuchs, H.** Über die Verbreitung der Kalkschalenbildung bei Balanidenlarven. Naturwissenschaften **41** 12 1954 : 286–287.

466.—**Kunz, H.** Beitrag zur Kenntnis der Harpacticoiden der Deutschen Bucht. Kieler Meeresforsch. **10** 1954 : 224–228 22 figs.

467.—**Kumaran, A. K.** Ecdysial mechanism in a decapod, *Penaeus indicus*. Curr. Sci. **23** 12 1954 : 404–405.

**Kurasawa, Y.** see Kitazawa & Kurasawa **442**.

468.—**Kurien, C. V.** The Cumacea of Travancore. Bull. centr. res. Inst. Univ. Travancore **2C** 1 1951 : 77–118 4 pls.

469.—**Kurien, C. V.** Bionomics, structure and development of *Caligus russelli*, sp. nov., parasitic copepod on the scorpion fish *Pterois russelli* (Van Hass.). Bull. centr. res. Inst. Univ. Travancore **1C** 1 1950 : 1–25 3 pls.

470.—**Labat, R.** *Paramysis nouveli* n. sp. et *Paramysis bacescoi* n. sp. deux espèces de Mysidacés confondues, jusqu'à présent, avec *Paramysis helleri* (G. O. Sars, 1877). Bull. Inst. océanogr. Monaco No. 1034 1953 : 1–23 39 figs.

471.—**Labat, R.** Observations sur l'accouplement et la ponte de *Paramysis nouveli* [Crustacé, Mysidacé]. Bull. Soc. Hist. nat. Toulouse **89** 3–4 1954 : 406–409 1 fig.

472.—**Landers, W. S.** Notes on the predation of the hard clam, *Venus mercenaria*, by the mud crab, *Neopanope texana*. Ecology **35** 3 1954 : 422.

473.—**Lang, K.** Eine neue Harpacticidengattung und die systematische Stellung von *Dactylophusia platysoma* Thompson et A. Scott. Ark. Zool. **6** 1954 : 597–601 3 figs.

474.—**Lapchik, F. E.** [The age of Peruvian deposits of Dnepro-Donetz depression]. C.R. Acad. Sci. URSS. n.s. **97** 3 1954 : 507–509. [In Russian].

475.—**Larwood, H. J. C.** Crustacea Tanaidacea and Isopoda from the Suez Canal. Ann. Mag. nat. Hist. (12) **7** 1954 : 561–577 3 figs.

476.—**Lawrence, R. F.** The biology of the cryptic fauna of forests, with special reference to the indigenous forests of South Africa. Cape Town (A. A. Balkema) 1953 pp. 408 160 figs.

477.—**Lebour, M. V.** First-stage larvae hatched from New Zealand decapod crustacea. Ann. Mag. nat. Hist. (12) **8** 1955 : 43–48 3 figs.

478.—**Lebour, M. V.** The plankton decapod Crustacea and Stomatopoda of the Benguela Current. Part 1. First survey, R.R.S. 'William Scoresby', March 1950. 'Discovery' Rep. **27** 1954 : 219–234 6 figs.

479.—**Lebour, M. V.** The position of *Pontophilus echinulatus* (M. Sars) in the Crangonidae. J. Mar. biol. Ass. U.K. **33** 3 1954 : 587–588.

480.—**Leentvaar, P.** De verspreiding van een bij zondere vlokreeft in Nederland. Levende Nat. **57** 11 1954 : 208–210 2 figs.

481.—**Leentvaar, P.** Het gedrag van de vlokreeft en de waterpissebed. Levende Nat. **57** 12 1954 : 221–223 2 figs.

482.—**Legrand, J. J.** Les Isopodes terrestres des îles du littoral atlantique. Contribution à l'étude du peuplement atlantique II. Bull. Soc. zool. Fr. **78** 1954 : 388–403 6 figs.

483.—**Legrand, J.-J.** Induction des caractères sexuels secondaires mâles chez les femelles des crustacés isopodes terrestres par implantation testiculaire. Premiers résultats. C.R. Acad. Sci. Paris **238** 1954 : 2030–2032.

484.—**Legrand, J.-J.** Étude expérimentale de la différenciation du sexe chez les crustacés et hétéroplastique d'ovaires chez les mâles. C.R. Acad. Sci. Paris **239** 1954 : 108–110.

485.—**Legrand, J.-J.** Effets de l'implantation d'un testicule chez les femelles des crustacés isopodes terrestres. C.R. Acad. Sci. Paris **239** 1954 : 321–323.

486.—**Lemos de Castro.** Fauna do Distrito Federal VIII. sobre a ocorrência dos gêneros "Miktoniscus" e "Cordioniscus" no Rio de Janeiro. (Isopoda, Trichoniscidae). Ann. Acad. bras. Sci. **25** 4 1953 : 527–534 22 figs.

**487.**—**Lemos de Castro, A.** Fauna do Distrito Federal. ix. Descrição de uma nova espécie do gênero "Eucinetops" Stimpson (Decapoda, Majidae). Rev. bras. Biol. **13** 4 1953 : 355-358 2 figs.

**487a.**—**Lenel, R.** Sur l'absorption des pigments caroténoides du crabe *Carcinus maenas* Pennant par son parasite *Sacculina carcinii* Thompson. C.R. Acad. Sci. Paris **238** 1954 : 948-949.

**488.**—**Leone, C. A.** Further serological data on the relationships of some decapod Crustacea. Evolution **8** 3 1954 : 192-205 3 figs.

**489.**—**Leone, C. A.** Effect of multiple injections of antigen upon the specificity of antisera. J. Immunology **63** 3 1952 : pp. 288-295.

**490.**—**Leone, C. A.** Some effects of Formalin on the serological activity of crustacean and mammalian sera. J. Immunology **70** 4 1953 : 386-393.

**491.**—**Le Sueur, R. F.** Marine Zoological Report for 1953. Bull. Soc. Jersiaise **XVI** 11 1954 : 139-143.

**492.**—**Le Sueur, R. F.** The Cumacea, Mysidacea, Amphipoda, Isopoda, and Tanaidacea of the Channel Islands. Bull. Soc. Jersiaise **XVI** pt. 11 1954 : 207-216.

**492a.**—**Levenko, A. I.** [On the age of salt bearing deposits in the region of the mountain Tuz-Tag (Tuba)]. Bull. Acad. Sci. URSS. zool. **3** 1955 : 83-91. [In Russian].

**492b.**—**Levenko, A. I.** and **Protopopova, M. V.** [On the stratigraphy and the distribution of the deposits of the middle Devonian in Tuva]. C.R. Acad. Sci. URSS n.s. **98** 5 1954 : 833-836. [In Russian].

**Levi, C.** see Bocquet, Hoestlandt & Levi 92.

**493.**—**Lewis, J. B.** The occurrence and vertical distribution of the Euphausiacea of the Florida current. Bull. mar. Sci. Gulf & Caribbean **4** 4 1954 : 265-301 32 figs.

**494.**—**Liebus, A.** Kritische Uebersicht der Mikrofauna des Burdigals vom Jaklowitz bei Mähr.-Ostrau. Lotos, Prag **87** 1 1940 : 3-43 3 pls. 1 fig. [Not seen].

**495.**—**Lindberg, K.** Notes sur quelques *Haliclops* (Crustacés copépodes) de la mer Caspienne. Description du *H. oblongus* n. sp. et du *H. robustus* n. sp. Nytt Mag. Naturv. **88** 1951 : 157-163 figs.

**496.**—**Lindberg, K.** Cyclopides (Crustacés Copépodes) de la Grèce. Prakt. Hellen. hydrobiol. Inst. **6** 1952 : 19-39 2 figs.

**497.**—**Lindberg, K.** Cyclopides (crustacés copépodes) du Maroc (II). Bull. Soc. Sci. nat. Maroc **32** 3 1953 : 193-197 2 figs.

**498.**—**Lindberg, K.** Cyclopides de Madagascar (crustacés copépodes). Quatrième note. Mém. Inst. Sci. Madagascar **8A** 1953 : 11-17 3 figs.

**499.**—**Lindberg, K.** Cyclopides des îles Kerguelen (crustacés copepodes). Mém. Inst. Sci. Madagascar **8A** 1953 : 19-24 4 figs.

**500.**—**Lindberg, K.** Liste de Cyclopides (Crustacés copépodes) recueillis à Hallands Väderö (Ile de la Suède). Ark. Zool. **6** 1954 : 75-81.

**501.**—**Lindberg, K.** Cyclopides (Crustacés copépodes) de l'Amérique du Sud. Ark. Zool. **7** 1954 : 193-222 7 figs.

**502.**—**Lindberg, K.** Un cyclopide (crustacé copépoda) tröglobie de Madagascar avec remarques sur un group de cyclopides très évolués, cavernicoles et musicoles. Hydrobiologia **6** 1-2 1954 : 97-119 2 figs.

**503.**—**Linder, C. and Mercier, P.** Etude comparative de la répartition des zooplancton au lac de Bret avant et après l'aération. Schweiz. Z. Hydrol. **16** 2 1954 : 309-317.

**504.**—**Lindner, M. J.** Estimation of growth rate in animals by marking experiments. Fish. Bull. U.S. **54** 1953 : 65-69 3 figs.

**505.**—**Lindner, M. J.** and **Anderson, W. W.** Biology of commercial shrimps. Fish. Bull. U.S. **55** 1954 : 457-461 3 figs.

**506.**—**Lochhead, J. H.** On the distribution of a marine cladoceran, *Penilia avirostris* Dana (Crustacea, Branchiopoda), with a note on its reported bioluminescence. Biol. Bull. Woods Hole **107** 1954 : 92-105.

507.—**Longhurst**, A. R. Reproduction in Notostraca (Crustacea). Nature, London **173** 1954 : 781-782.

508.—**Lovering**, J. F. A microfossil assemblage from the Minchinbury sandstone, Wianamatta Group. Aust. J. Sci. **15** 5 1953 : 171-173 5 figs.

509.—**Lozano-Cabo**, F. Una campana de prospección pesquera en Mar Menor (Murcia). Bol. Inst. esp. Oceanogr. **66** 1954 : 1-34.

511.—**Lüling**, K. H. Schmarotzende Ruderfüßskrebse. Ein Weg des Parasitismus. Leipzig (Geest & Portig) 1953, pp. 60 17 figs.

**Lund**, J. W. G. see Macan & Lund 513.

512.—**Mabillot**, S. Particularités histologiques de la membrane basale des mésentéron chez *Gammarus pulex* (L.). C.R. Acad. Sci. Paris **238** 1954 : 1738-1739.

513.—**Macan**, T. T. and **Lund**, J. W. G. Records from some Irish lakes, Part 1.—Mollusca, Gammarus, Asellus, Ephemoptera, and Heteroptera. Part 2.—Phytoplankton. Proc. R. Irish Acad. **56B** 4 1954 : 135-157.

514.—**Maccagno**, T. P. Sul secreto delle ghiandole tegumentali lobate degli Isopodi terrestri. Boll. Ist. Zool. Univ. Torino **3** 1952 : 177-184.

515.—**MacGintie**, G. E. and **MacGintie**, N. Natural History of Marine Animals. 1949 McGraw-Hill Book Co. Inc. [Crustacea pp. 252-326].

516.—**McMahon**, V. H. The abundance and distribution of entomostracan plankton at Lakelse Lake, B.C. 1949-1952. J. Fish. Res. Bd. Can. **11** 1954 : 479-499 8 figs.

517.—**McNeill**, F. Carcinological notes No. 2. Rec. Aust. Mus. **23** 3 1953 : 89-96 1 pl.

**Maglaperidze**, K. S. see Dzvelaya & Maglaperidze 237.

**Magné**, J. see Cheylan, Magné, Sigal & Grekoff 179.

518.—**Main**, A. Sex ratio and variation in *Apus australiensis* Spencer and Hall. W. Aust. Nat. **4** 2 1953 : 34-39.

519.—**Makhnach**, A. S., **Pistrak**, R. M., **Stefanenko**, A. Y. and **Tikhomirov**, S. V. [Stratigraphy of the Devonian lower salt deposits of Pripyatsk]. Bull. Acad. Sci. URSS. 3 geol. 1955 : 122-124. [In Russian].

**Mann**, H. see Meyer-Waarden & Mann 557-558.

520.—**Marcolini**, B. M. Alcuni esperimenti per l'alimentazione di cladoceri e copepodi d'acqua dolce con fosforo radioattivo ( $P^{32}$ ). Boll. Pesca Piscie. Idrobiol. (N.S.) **8** 1953 : 181-200 8 figs.

521.—**Margalef**, R. Materiales para la hidrobiología de la isla de Manorca. Publ. Inst. Biol. apl. Barcelona **11** 1952 : 5-112 16 figs. [English summary].

522.—**Margalef**, R. Materiales para hidrobiología de la isla de Maccorca. Publ. Inst. Biol. apl. Barcelona **15** 1953 : 5-111 1 pl. 7 figs. [English summary].

**Margalef**, R. see Massuti & Margalef 536.

523.—**Margolis**, L. Notes on the morphology, taxonomy and synonymy of several species of whale-lice. (Cymidae : Amphipoda). J. Fish. Res. Bd. Can. **12** 1955 : 121-133 23 figs.

523a.—**Margolis**, L. List of the parasites recorded from sea mammals caught off the west coast of North America. J. Fish. Res. Bd. Can. **11** 1954 : 267-283.

523b.—**Margolis**, L. Three kinds of whale-lice (Cymidae : Amphipoda) from the Pacific Coast of Canada, including a new species. J. Fish. Res. Bd. Can. **11** 1954 : 319-325 2 pls.

524.—**Margolis**, L. and **Butler**, T. H. An unusual and heavy infection of a prawn, *Pandalus borealis* Krøyer, by a nematode, *Contracaecum* sp. J. Parasit. **40** 6 1954 : 649-655 2 pls. 2 figs.

525.—**Markevitch**, A. P. and **Bauer**, U. N. [Parasitic Copepods of fresh-water fishes of Siberia]. Trud. Inst. Zool. Kiev **4** 1950 : 112-119. [In Ukrainian].

**Marlière**, R. see Movla & Marlière 568.

526.—**Marques**, E. Breves considerações sobre plâncton copépodes da Guiné. Colóquios. Jta. Invest. Colon. 1949–50 Lisbon No. 8 1950 pp. 1–14 2 pls.

**Marquet-Balesdent** see Balesdent-Marquet 50.

527.—**Marshall**, N. The balanoid biome-type of intertidal rocky shores. Ecology 34 2 1953 : 434–436.

528.—**Marshall**, N. B. Aspects of deep sea biology, London (Hutchinson's) 1954, pp. 380 frontis. col. 4 pls. col. text figs.

531.—**Marshall**, S. M. and **Orr**, A. P. Hatching in *Calanus finmarchicus* and some other copepods. J. Mar. biol. Ass. U.K. 33 2 1954 : 393–401 1 pl. 5 figs.

532.—**Mashiko**, K. Studies on the fresh-water plankton of Central China, I, II. Sci. Rep. Kanazawa Univ. 1 1–2 1951 : 17–31, 137–154 10 figs.

533.—**Mashiko**, K. Cladocera and Rotatoria of Central China (Studies on the fresh-water plankton of Central China. III). Sci. Rep. Kanazawa Univ. 2 1 1953 : 49–73 8 figs.

534.—**Mashiko**, K. On the geographical distribution of some brackish and fresh-water copepods in and around Japan. Sci. Rep. Kanazawa Univ. 2 2 1954 : 35–41 map.

535.—**Massal**, L. Résultats d'une enquête sur les crabes d'eau douce en Tunisie. Bull. Soc. Sci. nat. Tunis 6 1954 : 71–77 map.

536.—**Massuti**, M. and **Margalef**, R. Introducción al Estudio del Plancton Marino. Barcelona, 1950 : 1–182 492 figs.

537.—**Masuda**, T. On the antennal flagella of the Japanese spiny lobster *Panulirus japonicus* (v. Siebold), as an age determinant. Bull. Jap. Soc. sci. Fish. 19 1954 : 1007–1011.

538.—**Mathes**, I. and **Strouhal**, H. Zur Ökologie und Biologie der Ameisenassel *Platyarthrus hoffmannseggii*. Z. Morph. Ökol. Tiere 43 1954 : 82–93 1 fig.

**Matsakis**, J. see Huron, R. & Matsakis, J. 397.

539.—**Matsumoto**, K. Neurosecretion in the thoracic ganglion of the crab, *Eriocheir japonicus*. Biol. Bull. Woods Hole 106 1954 : 60–68 13 figs.

540.—**Matthews**, D. C. A comparative study of the spermatophores of three Scyllarid lobsters (*Parribacus antarcticus*, *Scyllarides squammosus*, and *Scyllarus martensi*). Quart. J. micr. Sci. 95 2 1954 : 205–215 10 figs.

541.—**Matthews**, D. C. The development of the pedunculate spermatophore of a hermit crab, *Dardanus asper* (De Haan). Pacif. Sci. 7 3 1953 : 255–266 15 figs.

542.—**Matthews**, D. C. The origin and development of the spermato-phoric mass of a nephropsid lobster, *Enoplometopus occidentalis* (Randall). Pacif. Sci. 8 2 1954 : 115–120 7 figs.

543.—**Matthews**, D. C. The development of the spermato-phoric mass of the rock lobster, *Parribacus antarcticus* (Lund). Pacif. Sci. 8 1 1954 : 28–34 11 figs.

544.—**Mattox**, N. T. Description of *Eocyclus concavus* (Mackin) with a review of other North American species of the genus (Crustacea: Conchostraca). J. Wash. Acad. Sci. 44 2 1954 : 46–49 1 fig.

545.—**Mattox**, N. T. A new *Eulimnadia* from the rice fields of Arkansas with a key to the American species of the genus (Conchostraca, Limnadiidae). Tulane Stud. Zool. 2 1954 : 1–10 8 figs.

546.—**Mawatari**, S., **Hirosaki**, Y. and **Kobayashi**, S. Settlement and growth of acorn barnacle, *Balanus amphitrite communis* Darwin. I. Misc. Rep. Res. Inst. nat. Resour. Tokyo No. 33 1954 : 46–55 7 figs.

547.—**Megyeri**, J. Faunistische und biologische Beobachtungen am Szegediner Nagyszéksortó. Ann. Biol. Univ. szeged. 1 1950 : 327–335 2 figs.

548.—**Megyeri**, J. Zusammenhänge zwischen den Veränderungen des Sec.-charakters der Tihanyer Belső-Tó und seines Planktons. Ann. Biol. hung. 1 1952 : 397–411. [Magyar with German summary].

549.—**Megyeri**, J. Vergleichende Untersuchungen der Sommerplanktons der Teiche (Vorläufige Mitteilung). Ann. Biol. hung. **2** 1954 : 441–449 1 fig. [German summary].

550.—**Megyeri**, J. Über die Lebensgemeinschaft einiger temporärer Tümpel auf einer Bergweide im Börzsonygebirge (Oberungen) VII. Crustaceen. Acta Biol. hung. **5** 3–4 1954 : 359–361.

**Megyeri**, J. see Abrahám, Bende, Horváth & Megyeri **12**.

551.—**Mennell**, F. P. The age of the Kalahari beds. S. Afr. J. Sci. **50** 2 1953 : 50–51.

552.—**Menzies**, R. J. A review of the systematics and ecology of the genus "Exosphaeroma", with the description of a new genus, a new species, and a new subspecies (Crustacea, Isopoda, Sphaeromidae). Amer. Mus. Novit. No. 1683 1954 : 1–24 12 figs.

553.—**Menzies**, R. J. The comparative biology of reproduction in the wood-boring isopod crustacean *Limnoria*. Bull. Mus. comp. Zool. Harv. **112** 1954 : 364–388 6 figs.

554.—**Menzies**, R. J. Notes on the structure of the marine asellote isopod *Ianiropsis breviremis* G. O. Sars. Nytt Mag. Naturv. **88** 1951 : 153–155 figs.

**Mercier**, P. see Linder & Mercier **503**.

555.—**Meredith**, S. S. The appendages of *Crangon vulgaris*, the brown shrimp. Proc. Leeds phil. lit. Soc. Sci. Sect. **6** 4 1954 : 228–242 8 figs.

556.—**Messikommer**, E. Zur Kenntnis der niederen Sumpf- und Wasserfauna der Gegend des Pfäffikersees (Kt. Zürich). Rev. suisse Zool. **61** 1954 : 635–656.

557.—**Meyer-Waarden**, P. F. and **Mann**, H. Der Befall von *Mytilus edulis* durch *Mytilicola intestinalis* in den deutschen Wattengebieten 1950–1953. Ber. dtsch. Komm. Meeresforsch. **13** 1954 : 347–362 2 figs.

558.—**Meyer-Waarden**, P. F. and **Mann**, H. Untersuchungen über die bestände von *Mytilus galloprovincialis* an der Italienischen Küste auf ihren befall mit *Mytilicola intestinalis*. Boll. Pesca Piscic. Idrobiol. (N.S.) **8** 1953 : 201–220 8 figs.

559.—**Michejdà**, J. The influence of Ca-ions on colour change in *Crangon crangon*. Prace Kom. biol. Poznán **13** 11 1953 : 1–27 3 figs. [English summary].

560.—**Michejdà**, J. An analysis of the ecological conditions in springs and streams of the Góry Stołowe. Wydz. mat. prayr. Kom. Biol. **14** 6 1954 : 1–110 figs. maps. [Polish with English summary].

561.—**Michel**, A. and **Anders**, F. Über die Pigmente im Auge von *Gammarus pulex* L. (Crust. Amphip.). Naturwissenschaften **41** 3 1954 : 72.

562.—**Mikulić**, F. G. Contribution à la connaissance de l'écologie des ostracodes. Arh. biol. Nauk **5** 1–2 1953 : 61–67 2 figs. [Not seen].

**Millard**, N. A. H. see Day, Millard, Brockhuysen & Harrison **201**.

**Moller-Racke**, I. see Buddenbrock, Schaller & Moller-Racke **145**.

563.—**Mitchell**, D. F. An analysis of Stomach Contents of California Tide Pool Fishes. Amer. midl. Nat. **49** 1953 : 852–871.

564.—**Miura**, Y. and **Morimoto**, Y. Larval development of *Bathynella morimotoi* Ueno. Annot. zool. jap. **26** 1953 : 238–245 4 figs.

**Miyawaki**, M. see Nishida, H. & Miyawaki, M. **885**.

**Moar**, N. T. see Cunningham, Moar, Torrie & Parr **190**.

565.—**Mohr**, J. L. Some observations on Arctic crustaceans and their associates : Notes on the fauna of Nuuk Pond, Point Barrow. Stanf. Univ. Publ. Biol. Sci. **11** 1953 : 14–18.

566.—**Monod**, T. Contribution à L'Étude de L'Air (Mission L. Chopard et A. Villiers) Crustacés phyllopodes. Mém. Inst. franç. Afr. noire. No. 10 1950 : 90–92 2 figs.

567.—**Monod**, T. *Eurydice* de la faune interstitielle littorale. Vie et Milieu **4** 2 1953 : 277–279 6 figs.

568.—**Monta**, F. and **Marlière**, R. Ao camadas filópodes da série de Cassange (Karroo) no Norte de Angola. Ann. Jta. Invest. colon., Lisbon **5** 4 fasc. 1 1950 : 3–78 8 pls. 2 figs.

**Montague, J. T. W.** see Stekhoven & Montague 751.

569.—**Moore, H. B., Owre, H., Jones, E. C. and Dow, T.** Plankton of the Florida current. III. The control of the vertical distribution of zooplankton in the daytime by light and temperature. Bull. mar. Sci. Gulf & Caribbean 3 2 1953 : 83-95 1 fig.

570.—**Mordorski, V. T. and Dittmar, V. I.** [Stratigraphy of the Devonian deposits of the Ribinsk depression (Eastern Siberia)]. C.R. Acad. Sci. URSS. n.s. 95 5 1954 : 1055-1058. [In Russian].

571. — **Mordukhai-Boltovskaya, E. D.** [Data on distribution and seasonal dynamics of zooplankton in Ribinsk water-reservoir]. C.R. Acad. Sci. URSS. n.s. 94 2 1954 : 341-344 2 diagr. [In Russian].

**Morimoto, Y.** see Miura & Morimoto 564.

572.—**Morris, R. W. and Hill, B. L.** New ostracoda from the middle Silurian Newsom shale of Tennessee. Bull. Amer. Paleont. 34 (142) 1952 : 1-22 pls. 1-2.

573.—**Morton, J. E.** The crevice fauna of the upper intertidal zone at Wembury. J. Mar. biol. Ass. U.K. 33 1 1954 : 187-224 7 figs.

574.—**Motoda, S. and Anraku, M.** Daily change of vertical distribution of plankton animals near western entrance to the Tsugaru Strait, Northern Japan. Bull. Fac. Fish. Hokkaido 5 1954 : 15-19 3 figs.

575.—**Muehlberger, C.** Über die Verbreitung subterrane Amphipoden im Gebiete der Lausitzer Hauptverwefang. Naturwissenschaften 41 17 1954 : 407-408 1 fig.

576.—**Murachi, S. and Imai, T.** Studies on the culture of water fleas, *Moina macrocopa* Straus, in artificial culture medium. Tohoku J. agric. Res. 5 1 1954 : 27-36.

577.—**Muromtzev, V. S.** [The age of the Ostrog series of Kuzbass]. C.R. Acad. Sci. URSS. n.s. 95 5 1954 1059-1061. [In Russian].

**Muthe, P. T.** see George, Reuben & Muthe 290.

578.—**Nagahama, H.** Influence of the inhibiting nerve impulse on the contraction of the leg muscle of the crayfish. J. Fac. Sci. Tokyo Univ. (Zool.) 7 1954 : 15-30 6 figs.

579.—**Nagano, T.** Physiological studies on the pigmentary system of Crustacea. XI. Adsorption of silver on the gills of a shrimp and a crayfish. Sci. Rep. Tōhoku Univ. (4) 20 3 1954 : 244-248 3 figs.

**Nair, S. G.** see Gopalakrishnan Nair 304.

580.—**Nazarova, V. A.** [Stratigraphy of bordering deposits of Devonian and Carboniferous in the southern part of Dono-Medveditzk elevation]. C.R. Acad. Sci. URSS. 94 3 1954 : 541-544. [In Russian].

581.—**Needham, A. E.** Properties of the minerals in the exuvia of Crustacea. Quart. J. micr. Sci. 95 2 1954 : 183-190 1 pl.

582.—**Needham, A. E.** Physiology of the heart of *Asellus aquaticus* L. Nature, London 173 1954 : 272.

583.—**Nelson, A. M. R.** Experiment to discover the reaction of the woodlouse *Porcellio scaber*, to an inclination. Dauntsey's Sch. biol. Bull. No. 3 1947 : 70-73.

584.—**Newell, G. E.** The marine fauna of Whitstable. Ann. Mag. nat. Hist. (12) 7 1954 : 322-350

585.—**Nishida, H. and Miyawaki, M.** Occurrence of a remarkable glandular body in the eye-stalk of *Paralithodes camtschatica* and *P. brevipes*. Zool. Mag. Tokyo 63 1954 : 274-277.

586.—**Nishizawa, S., Fukuda, M. and Inone, N.** Photographic study of suspended matter and plankton in the sea. Bull. Fac. Fish. Hokkaido 5 1954 : 36-40 6 figs.

587.—**Noel, M. S.** Animal ecology of a New Mexico springbrook. Hydrobiologia 6 1-2 1954 : 120-135 6 figs.

588.—**Noll, W. and Stammer, H. J.** Die Grundwasserfauna des Untermaingebietes von Hanau bis Würzburg mit Einschluss des Spessarts. Mitt. naturw. Ver. Aschaffenburg. N.S. No. 6 1953 : 1-77 11 figs.

589.—**Noodt, W.** Entomostraken aus dem Litoral und dem Kustengrundwasser des Finnischen Meerbusens. *Acta zool. fenn.* **72** 1953 : 1-12.

590.—**Noodt, W.** Crustacea Mysotacocarida von Sud-Afrika. *Kieler Meeresforsch.* **10** 1954 : 243-246 7 figs.

591.—**Noodt, W.** Copepoda Harpacticoidae von der chilenischen Meeresküste. *Kieler Meeresforsch.* **10** 1954 : 247-252 34 figs.

592.—**Noodt, W.** Copepoda Harpacticoidae aus dem limnischen Mesop-sammal der Türkei. *Publ. Inst. Hydrobiol. Univ. Istanbul* **2B** 1 1954 : 27-40 3 pls.

593.—**Nouvel, H.** Un Ellobiopsidae nouveau (*Amallocystis boschmai* n. sp.) parasite d'un mysidacea en Méditerranée. (Note préliminaire). *Vie et Milieu* **4** 1 1954 : 57-58 figs.

594.—**Nouvel, H.** Description d'un Mysidacé nouveau de Ceylan *Mesopodopsis zeylanica* n. sp. *Zool. Meded.* **33** 1954 : 33-39 16 figs.

595.—**Novellie, L. and Schwartz, H. M.** Occurrence and distribution of sarcosine in the rock lobster. *Nature, London* **173** 1954 : 450.

596.—**Novozhilov, N. I.** [New species of Phyllopods in the Devonian of Southern Siberia]. *C.R. Acad. Sci. URSS. n.s.* **95** 1 1954 : 159-162 pl. [In Russian].

597.—**Novozhilov, N. I.** [Bivalve Phyllopods belonging to the family Leaiidae from coal deposits of Kazakhstan]. *C.R. Acad. Sci. URSS. n.s.* **96** 6 1954 : 1241-1244. [In Russian].

598.—**Nunes-Ruivo, L.** Copépodes parasites de poissons. *Vie et Milieu Suppl. No. 3* 1954 : 115-138 11 figs.

**Nunes-Ruivo, L.** *see* Delamare-Debouteville & Nunes-Ruivo **216**, 217.

**Obruchev, D. V.** *see* Graizer, Obruchev & Sokoloskaya **311**.

599.—**Odum, H. T.** Factors controlling marine invasion into Florida fresh waters. *Bull. mar. Sci. Gulf & Caribbean* **3** 2 1953 : 134-156 4 figs.

600.—**Ojima, Y.** On the spermatogenesis of *Daphnia pulex* (de Geer). *J. Fac. Sci. Hokkaido Univ. (Zool.)* **12** 1954 : 225-229 17 figs.

601.—**Ojima, Y.** Some cytological observations on parthenogenesis in *Daphnia pulex* (de Geer). *J. Fac. Sci. Hokkaido Univ. (Zool.)* **12** 1954 : 230-235 3 pls.

602.—**Oliveira, L. H. P. de.** Crustacea Amphipoda do Rio de Janeiro. *Mem. Inst. Osw. Cruz* **51** 1954 : 289-376 27 pls.

603.—**Oliveira, L. de and Krau, L.** Levantamento biogeográfico da Baía de Guanabara. II.—Crescimento do manquezal na Ilha do Pinheiro. *Mem. Inst. Osw. Cruz* **51** 1954 : 503-543 31 figs.

604.—**Onodi, L. A.** Expériences régénératives sur les antennes antérieures du *Gammarus roeseli*. *Ann. Biol. hung.* **2** 1954 : 115-120 1 pl.

**Orghidan, T.** *see* Botnariuc & Orghidan **111**.

**Ormières, R.** *see* Tuzet & Ormières **798**.

**Orr, A. P.** *see* Marshall & Orr **531**.

**Orton, J. H.** *see* Southward & Orton **747**.

605.—**Osorio de Castro, J.** Glosário de nomes dos peixes. *Lisboa (Gabinete de Estudos das Pescas)* 1954 pp. 249.

**Ovre, H.** *see* Moore, Ovre, Jones & Dow **569**.

606.—**Palluault, M.** Notes écologiques sur le *Talitrus saltator* L. *Arch. Zool. exp. gén.* **91** 1954 : Notes et Rev. 105-129.

606a.—**Palombi, A. and Santarelli, M.** Gli animali commestibili dei mari d'Italia. Descrizione e nomi italiani, dialettali e stranieri dei pesci—tunicati—echinodermi—molluschi—crostacei. *Milano (Ulrico Hoepli)* 1953 pp. vi + 349 2 pls col. 261 figs.

607.—**Papp, A. and Thenius, E.** Vösendorf—ein Lebensbild aus dem Pannon des Wiener Beckens. *Mitt. geol. Ges. Wien* **46** 1954 : 24.

**Paraiso, F.** *see* Cadenat & Paraiso **153**.

**608.**—**Pardi,** L. Über die Orientierung von *Tylos latreillii* Aud. & Sav. (Isopoda terrestria). Z. Tierpsychol. **11** 1954 : 175–181 10 figs. [German with English summary].

**609.**—**Paris,** J. Contribution à la connaissance de la "Zone nord des camolots". Vie et Milieu **5** 4 1954 : 469–511 9 figs.

**Parr,** P. J. *see* Cunningham, Moar, Torrie & Parr **190**.

**610.**—**Parry,** G. Ionic regulation in the palemonid prawn *Palaemon* (= *Leander*) *serratus*. J. exp. Biol. **31** 4 1954 : 601–613 1 fig.

**Partsch,** K. *see* Hirschmann & Partsch **366**.

**611.**—**Passano,** L. M. Phase microscopic observations of the neurosecretory product of the crustacean X-organ. Pubbl. Staz. zool. Napoli **24** Suppl. 1954 : 72–73.

**612.**—**Patalas,** K. Pelagic Crustacean complexes of 28 Pomeranian lakes. Ekol. polska **2** 1 1954 : 61–92 9 figs.

**613.**—**Patalas,** K. Comparative studies on a new type of self acting water samples for plankton and hydrochemical investigations. Ekol. Polska **2** 2 1954 : 231–242 2 figs. [English summary].

**Paulian de Félice,** *see* Félice **259**.

**615.**—**Pearcy,** W. G. Some limnological features of Clear Lake. Iowa St. Coll. J. Sci. **28** 2 1953 : 189–207.

**616.**—**Pearse,** A. S. Three parasitic isopods (Bopyridae) from the Carolina coast. J. Parasit. **39** 6 1953 : 619–620 7 figs.

**617.**—**Peckham,** R. S. and **Dineen,** C. F. Summer plankton of Lake Amatitlan, Guatemala. Amer. midl. Nat. **50** 2 1953 : 377–381.

**618.**—**Pelseneer,** P. Copépodes parasites de Mollusques. Ann. Soc. roy. zool. Belg. **59** 1929 : 33–49 5 text-figs. [Hitherto omitted from Z.R.].

**619.**—**Penn,** G. H. The genus *Orconectes* in Louisiana (Decapoda, Astacidae). Amer. midl. Nat. **47** 3 1952 : 743–748.

**620.**—**Penn,** G. H. Introduction of American crawfishes into foreign lands. Ecology **35** 2 1954 : 296.

**621.**—**Pennak,** R. W. Fresh-water Invertebrates of the United States. 1953, New York 769 pp. 470 figs.

**622.**—**Perkins,** N. E. Breeding crayfish in an Aquarium. Aquarist & Pondkpr. **19** 1954 : 36–37 3 figs.

**623.**—**Pesta,** O. Beobachtungen über die Entomostrakenfauna der Tümpel auf der "Gerlosplatte" (1640 m. ü. d. Meer). S.B. öst. Akad. Wiss. Abt. I **161** 4–5 1952 : 285–289.

**624.**—**Pesta,** O. Biologische Beobachtungen an einigen Hochgebirgstümpeln der Kitzbühler Alpen (Tirol). S.B. öst. Akad. Wiss. Abt. I **161** 6 1952 : 329–342 2 figs.

**625.**—**Pesta,** O. Notiz über ein Vorkommen von *Diaptomus (Arctodiaptomus) wierzejskii* Richard in Niederösterreich. Anz. öst. Akad. Wiss. **91** 1954 : 52–54 figs.

**626.**—**Pesta,** O. Studien über die Entomostrakenfauna des Neusiedler Sees. Wiss. Arb. Burgenland No. 2 1954 : 1–84 41 figs.

**627.**—**Petrovski,** T. K. Beitrag zur Kenntnis der Jugoslavischen Cyclopiden. Acta Mus. maced. Sci. nat. **2** 1 1954 : 1–31 33 figs.

**628.**—**Petrovski,** T. K. Harpacticiden des Grundwassers unserer Meeresküste. Acta Mus. maced. Sci. nat. **2** 5 1954 : 93–123 81 figs.

**Pielat y Bolívar** *see* Bolívar **95**.

**629.**—**Pike,** R. B. Notes on the growth and biology of the prawn *Spirontocaris lilljeborgii* (Danielssen). J. Mar. biol. Ass. U.K. **33** 3 1954 : 739–747 3 figs.

**630.**—**Pillai,** N. K. The larval stages of *Periclimenes (Ancylocaris) grandis* Stimpson. Bull. central res. Inst. Univ. Travancore **1C** 1 1950 : 27–45 3 pls.

**631.**—**Pillai,** N. K. Decapoda (Brachyura) from Travancore. Bull. centr. res. Inst. Univ. Travancore **2C** 1 1951 : 1–46 5 figs.

**632.**—**Pillai,** N. K. A preliminary note on the Tanaidacea and Isopoda of Travancore. Bull. centr. res. Inst. Univ. Travancore **3C** 1 1954 : 1–21.

633.—**Pillai**, N. K. A note on *Callianassa maxina* M. Edwards (Decapoda). Bull. centr. res. Inst. Univ. Travancore **3C** 1 1954 : 23–26 5 figs.

634.—**Pillai**, N. K. On the occurrence of *Palinnotus natalensis* (Amphipoda) in Travancore. Bull. centr. res. Inst. Univ. Travancore **3C** 1 1954 : 27–29 8 figs.

635.—**Pillay**, T. V. R. The ecology of a brackishwater *Bheri*, with special reference to the fish-cultural practices and the biotic interaction. Proc. nat. Inst. Sci. India **20** 4 1954 : 399–427 3 pls. 5 figs.

636.—**Pilsbry**, H. A. Notes on Floridan barnacles (Cirripedia). Proc. Acad. nat. Sci. Philad. **105** 1953 : 13–28 2 pls. 5 figs.

637.—**Plessis**, Y. Comportement de *Pinnotheres pisum* Penn. en aquarium. Bull. Mus. Hist. nat. Paris (2) **25** 6 1954 : 562.

638.—**Pljakić**, M. A contribution to the study of the distribution of *Gammarus (Rivulogammarus) pulex fossorum* in Serbia. Arh. biol. Nauk **4** 1–2 1952 : 81–88 4 figs. [English summary]. [Not seen].

639.—**Pljakić**, M. Verification of statistical methods in the biometrical investigation of differences in the Cladocera populations. Arh. biol. Nauk **4** 3–4 1952 : 165–176 1 fig. [English summary]. [Not seen].

640.—**Poisson**, R. and **Sazet**, P. A propos des Pennelles (Crustacés Copépodes) parasites des germons : *Pennella germanica fagei* nov. subsp. Ann. Sci. nat. (Zool.) (11) **15** 1954 : 397–403 4 figs.

641.—**Ponomareva**, L. A. [Copepods as food of Euphausiids in the Sea of Japan]. C.R. Acad. Sci. URSS, n.s. **98** 1 1954 : 153–154 fig. [In Russian].

642.—**Ponomareva**, L. A. [Weight characteristics of Euphasiids in the Sea of Japan]. C.R. Acad. Sci. URSS n.s. **99** 1 1954 : 169–171 diagr. [In Russian].

643.—**Ponomareva**, L. A. [The food and the distribution of Euphasiids of the Sea of Japan]. Zool. Zh., Moscow **34** 1 1955 : 85–97 7 figs. [In Russian].

**Pope**, E. *see* Dakin, Bennett & Pope **197**.

644.—**Pope**, E. C. Stones that walk. Aust. Mus. Mag. **11** 2 1953 : 44–46 3 figs.

645.—**Popov**, Y. N. [Palao-ecology of *Estheria*]. C.R. Acad. Sci. URSS. **94** 4 1954 : 769–770. [In Russian].

646.—**Popovska**, O. Die Plankton-Production des Dojran-Sees, von Aug. 1951 bis Aug. 1952. Izd. Inst. Pisc. Macédoine **1** 1954 : 1–20 4 figs.

**Postma**, H. *see* Andel & Postma **21**.

**Pouget**, J. *see* Sanchez, S. **692**.

647.—**Powell**, H. T. Occurrence of *Chthamalus stellatus* (Poli) in Fair Isle and Shetland. Nature, London **173** 1954 : 688.

648.—**Prasad**, R. R. and **Tampi**, P. R. S. Some aspects of relative growth in the blue swimming crab *Nepturus pelagicus* (Linnaeus). Proc. nat. Inst. Sci. India **20** 2 1954 : 218–234 9 figs.

649.—**Purchon**, R. D. and **Enoch**, I. Zonation of the marine fauna and flora on a rocky shore near Singapore. Bull. Raffles Mus. Singapore **25** 1954 pp. 47–65 figs.

650.—**Purasjoki**, K. J. Beobachtungen über die Einwirkung gesteigerter Salzgehalts auf das Auftreten einiger marinen Zooplanktonarten ausserhalb Helsinki. Arch. Soc. Vanamo **8** 1953 : 101–104.

651.—**Puzanov**, I. I. [On some variations occurring in marine organisms entering the salt limans]. Bull. Soc. Nat. Moscow **59** (4) 1954 : 23–31. [In Russian].

652.—**Rabien**, A. Zur Taxonomie und Chronologie der Oberdevonischen Ostracoden. Abh. hess. Landesamt. Bodenforsch. **9** 1954 : 1–268 pls. 1–5 text-figs. 1–7.

652a.—**Raja Bai Naidu**, K. G. A note on the courtship in the sand crab [*Philyra scabriuscula* (Fabricus)]. J. Bombay nat. Hist. Soc. **52** 2–3 1954 : 640–641.

653.—**Raja Bai Naidu**, K. G. The post-larval development of the shore crab *Ocypoda platytarsis* M. Edwards and *Ocypoda cordimana* and Desmarest. Proc. Indian Acad. Sci. **40B** 4 1954 : 89–101 30 figs.

654.—**Rancurel**, P. Un nouveau copépode parasite de taret : *Tere-dophilus renicola*. Bull. Inst. franç. Afr. noire **16A** 3 1954 : 848-858 11 figs.

**Randall**, J. E. *see Reel, Randall & Takata 834*.

655.—**Rangnekar**, P. V. A comparative study of the blood volume in the crustaceans *Scylla serrata*, *Panulirus polyphagus* and *Paratelphusa guerini*. J. Anim. Morph. Physiol. **1** 1954 : 62-64.

656.—**Rangnekar**, M. P. *Anuretes branchialis* sp. nov. a copepod parasitic on the fish *Thynnus pelamys* (Linn.). J. zool. Soc. India **5** 1953 : 239-242 1 fig.

657.—**Ravera**, O. La struttura demografica dei copepodi del Lago Maggiore. Mem. Ist. ital Idrobiol. de Marchi **8** 1954 : 109-150 7 figs. [English summary].

**Razet**, P. *see Poisson & Razet 640*.

658.—**Redfield**, A. C. et al. Marine fouling and its prevention, Annapolis, Md. (U.S. Naval Institute), 1952, pp. x + 388 frontis, text illust.

**Reed**, J. J. *see Wellman, Reed, Fleming & Hornibrook 837*.

659.—**Reggiani**, M. P. Osservazioni preliminari sul comportamento del nucleolo e delle ribonucleoproteine negli ovvate e nelle cellule nutritive di " *Simocephalus vetulus* " (" Cladocera, Daphinidae "). R.C. Accad. Lincei (8) **17** 3-4 1954 : 124-132 6 figs.

660.—**Reinhard**, E. G. A Case of Conjoined Twins in *Loxothylacus* (Crustacea, Rhizocephala). Proc. Helminth. Soc. of Washington 1954 **21** 2 : 67-71 figs. 1-5. [Not seen].

661.—**Reish**, D. J. Polychaetous Annelids as associates and predators of the Crustacean wood borer, *Limnoria*. Wasmann J. Biol. **12** 2 1954 : 223-226.

662.—**Remsberg**, V. B. lk. A study of the cyclic behaviour of the testis of *Cambarus longulus* Girard with notes on the juvenile males. Virginia J. Sci. N.S. **4** 4 1953 : 229, 230 (2).

663.—**Remy**, J. M. Décapode nouveau de la série du Lualaba au Congo Belge. Rev. Zool. Bot. afr. **49** 1954 : 81-83 1 fig.

664.—**Remy**, J. M. Contribution à l'étude de la terrasse marine de la Pointe Kudevele (Congo). Rev. Zool. Bot. afr. **49** 1954 : 24-26 2 figs.

665.—**Remy**, J.-M. et **Tessier**, F. Décapodes nouveaux de la partie ouest du Sénégal. Bull. Soc. géol. Fr. **64** 1-3 1954 : 185-191 1 text-fig. pl. 11.

**Reuben**, N. *see George, Reuben & Muthe 290*.

666.—**Richards**, A. G. The integument of Arthropods. The chemical components and their properties, the anatomy and development, and the permeability. Minneapolis (Univ. Minnesota Press) 1951 pp. XVI + 411 65 figs.

667.—**Richardson**, L. R. Variation in *Squilla armata* M. Edw. (Stomatopoda) suggesting a distinct form in New Zealand waters. Trans. roy. Soc. N.Z. **81** 2 1953 : 315-317 3 figs.

668.—**Richey**, W. C. Vertebrate relatives. Proc. Pa. Acad. Sci. **27** 1953 : 245-260 13 figs.

**Rickard**, L. R. V. *see Fisher & Rickard 265*.

668a.—**Riek**, E. F. The Australian freshwater prawns of the family Atyidae. Rec. Aust. Mus. **23** 3 1953 : 111-121 11 figs.

669.—**Rioja**, E. Estudios carcinológicos. XXX. Observaciones sobre los cirolanidos cavernícolas de Mexico (Crustaceos, Isópodos). An. Inst. Biol. Mex. **24** 1 1953 : 147-170 6 pls.

670.—**Rioja**, E. Estudios carcinológicos. XXXI. Algunas especies de armadilidos de las Cuevas de Mexico (Isópodos terrestres). An. Inst. Biol. Univ. Méx. **25** 1954 : 275-288 4 pls.

**Ripley**, S. H. *see Wiersma & Ripley 841*.

671.—**Roche**, A. Contribution à l'étude histophysiologique de l'appareil digestif chez *Asellus aquaticus* L. Ann. Sci. nat. (Zool.) (11) **15** 1954 : 347-359 1 pl.

672.—**Roche**, A. Sur la nature des grains jaunes présents dans les cellules des coecums hépatiques chez certains Isopodes. Arch. Zool. exp. gén. **91** 1954 : Notes et Rev. 157-166 2 figs.

**673.**—**Rodina, A. G. and Troshin, A. S.** [Application of atoms to the study of food of aquatic animals]. C.R. Acad. Sci. URSS. n.s. **98** 2 1954 : 297-300 3 figs. [In Russian].

**674.**—**Røen, U.** Om småkrebsfaunaen i en jydsk, oligotoph sp, Langsø i G. ranc plantage, mett et fund af *Eucyclops lilljeborgi* (G. O. Sars) ny for Danmark. Flora og Fauna **60** 1-2 1954 : 11-18 2 figs. [English summary].

**Rognone, L.** see Urbani, Russo & Rognone 802.

**675.**—**Romano, A.** Su di un Cabriopside parassita di *Bopyrina virbii*. Boll. Zool. **20** 1953 : 83-87 5 figs.

**676.**—**Rome, R.** L'étude des Ostracodes actuels du Congo Belge. Ann. Mus. Congo belge. N.S. Soc. Zool. **1** 1954 : 269-273.

**677.**—**Romanovský, A.** *Trachelastes maculatus* Kollar 1836, ein für die Tschechoslowakei neuer parasitischer Ruderfusskrebs. Mém. Soc. zool. tchéosl. **18** 1954 : 71-72.

**678.**—**Rome, D. R.** Contribution à l'étude des ostracodes de Belgique. Bull. Mus. Hist. nat. Belg. **30** 33 1954 : 1-32 7 figs.

**679.**—**Rose, M. and Hamon, M.** A propos de *Pennella varians* Steenstrup et Lütken, 1861, parasite des branchies de Céphalopodes. Bull. Soc. Hist. nat. Afr. N. **44** 5-6 1953 : 172-183 5 figs.

**680.**—**Rose, M. and Vaissière, R.** A propos du genre *Corissa* G. P. Farran 1936 et des espèces *Corissa parva* Farran, 1936 et *Vettoria longifurca*, Rose et Vaissière, 1952. Ann. Sci. nat. (Zool.) **15** 1954 : 393-396.

**681.**—**Rose, M. and Vaissière, R.** Catalogue préliminaire des copépodes de l'Afrique du Nord (suite III). Bull. Soc. Hist. nat. Afr. N. **44** 1-2 1953 : 83-99.

**682.**—**Roubault, A.** Influence de la salinité sur certaines formes d'Asellides. Bull. Soc. zool. Fr. **79** 1954 : 184-188 2 figs.

**683.**—**Rozhdestvenskaya, A. A.** [On the upper border of Zhivetz stratum in Western Bashkiria according to Ostracode fauna]. C.R. Acad. Sci. URSS. n.s. **99** (3) 1954 : 439-440. [In Russian].

**684.**—**Ruffo, S.** Recherches sur les Crustacés Souterrains (Première Sérié) IX *Bogidiella chappuisi* Ruffo nouvel Amphipode phréatobie de la faune Française. Arch. Zool. exp. gén. **91** 1954 : 145-152 2 figs.

**685.**—**Ruffo, S.** Studi sul Crostacei Anfipodi XL Nuovi Anfipodi raccolti nel Venezuela. Mem. Mus. civ. Stor. nat. Verona **4** 1954 : 117-125 2 figs.

**686.**—**Ruffo, S.** Studi sui Crostacei anfipodi. XL. Nuovi anfipodi raccolti nel Venezuela. XLI. *Tetacragonix longicaudus* n. sp. (Amphipoda Gammaridae) delle acque sotterranee del Sahara Marocchino. Mem. Mus. civ. Stor. nat. Verona **4** 1954 : 127-130 1 fig.

**687.**—**Ruffo, S.** Anfipodi di acqua interstiziali raccolti dal tr. C. Dalamare Deboutteville in Francia, Spagna e Algeria. Vie et Milieu **4** 4 1953 : 669-681 4 figs.

**Ruffo, S.** see Balazuc & Ruffo 48, Delamare Deboutteville & Ruffo 218.

**688.**—**Ruggieri, G.** Iconografia degli Ostracodi marini del Pliocene e del Pleistocene italiani Parte 2d. Atti Soc. ital. Sci. nat. **93** 3-4 1954 : 561-575 25 figs.

**689.**—**Rüsche, E.** Die mackropische Lebenwelt an den Uferne des Rheinhafens von Duisberg-Ruhrort. Arch. Hydrobiol. **49** 3 1954 : 386-413 6 figs.

**Russo, S.** see Urbani, Russo & Rognone 802.

**Rzòska, J.** see Brook & Rzòska 139.

**690.**—**Sachlan, M.** Notes on parasites of freshwater fishes in Indonesia. Contr. Inl. Fish. Res. Sta. Bogor No. 2 1952 : 1-59 text figs.

**Salvadori, F. B.** see Stella & Salvadori 752.

**691.**—**Samoilova, R. B., Smirnova, R. F. and Fomina, E. V.** [New data on stratigraphy of Tulsk horizon of the lower Carboniferous in Submoscowian depression]. C.R. Acad. Sci. URSS **96** 2 1954 371-373 fig. [In Russian].

**692.**—**Sanchez, S. and Pouget, J.** Étude de la genèse des amibocytes sanguins de *Carcinus moenas* Penn. Bull. Soc. zool. Fr. **79** 1954 : 158-161 2 figs.

**Sandeen**, M. I. *see* Brown & others 143.

**693.—Sandison**, E. E. The identification of the Nauplii of some South African barnacles with notes on their life histories. *Trans. roy. Soc. S. Afr.* **34** 1 1954 : 69–101 14 figs.

**Santarelli**, M. *see* Palombi, A. & Santarelli, M **606a**.

**694.—Santos Pinto**, J. dos. Estudos de plâncton. Seu interesse científico e económico. *Colóquios. Jta. Invest. Colon.* 1949–50, Lisbon No. 13 1950 : pp. 1–28 5 pls. 1 fig.

**695.—Saudray**, Y. Utilisation des réserves lipidiques au cours de la ponte et du développement embryonnaire chez deux crustacés : *Ligia oceanica* Fab. et *Homarus vulgaris* Edw. *C.R. Soc. Biol., Paris* **148** 1954 : 814–816.

**696.—Savvateev**, V. B. [Physiology and adaptations to the salinity variations in *Balanus balanoides*]. *Zool. Zh.*, Moscow **31** 6 1952 : 861–865 2 figs. [In Russian].

**697.—Schachter**, D. and **Conat**, M. Note sur la faune des eaux temporaires de la petite Camargue. *Bull. Mus. Hist. nat. Marseille* **12** 1953 : 7–13.

**698.—Schäfer**, W. Form und Funktion der Brachyura-Schere. *Abh. senckenb. naturf. Ges.* No. 489 1954 : 1–65 125 figs.

**699.—Schäfer**, H. W. Über Meeres—und Brackwasser—Ostracoden aus dem Deutschen Küstengebiet mit. 2. Mitteilung über die Ostracodenfauna Griechenlands. *Hydrobiologia* **5** 4 1953 : 351–389 15 figs.

**700.—Schäfer**, H.-W. Über Süßwasser—Ostracoden aus der Türkei. *Publ. hidrobiol. res. Inst. Univ. Istanbul* **1B** 1 1952 : 7–32 27 figs.

**Schaller**, F. *see* Buddenbrock & Möller-Racke & Schaller **145**.

**701.—Scheer**, B. T. and M. A. R. The hormonal control of metabolism in crustaceans. VII. Moulting and colour change in the prawn *Leander serratus*. *Pubbl. Staz. zool. Napoli* **25** 1954 : 397–426 3 figs.

**Schicks**, E. *see* Koch, Evans & Schicks **449**.

**702.—Schilder**, F. A. Einführung über die Biotaxonomie (Formenkreislehre). *Jena*, 1952 : 1–162 121 figs.

**703.—Schmidt**, G. Stratigraphisch wichtige Ostracoden im "Kimeridge" und tiefssten "Portland" N.W.-Deutschlands. *Palaont. Z.* **28** 1–2 1954 : 81–101 text-figs. 1–3 pls. 5–8.

**704.—Schmidt**, W. J. Polarisationsmikroskopische Beobachtungen an der roten Borsten von *Mysis flexuosa* (Müll.). *Helgoland. wiss. Meeresunters.* **5** 1954 : 34–40 5 figs.

**704a.—Schmidt**, W. J. Ein geeignetes Objekt zur Erzeugung künstlicher Doppelbrechung an Chromatin von Interphasekernen. *Zool. Anz.* **152** 1954 : 263–266 1 fig.

**705.—Schmitt**, W. L. Copepoda. *Fish. Bull. U.S.* **55** 1954 : 439–442.

**706.—Schmöller**, K. Beitrag zur Kenntnis der Gattung *Armadillidium* Latr. 1804. *Acta zool. fenn.* **80** 1954 : 1–63 171 figs.

**707.—Schmöller**, K. Isopoda terrarum mediterranearum. 2. Mitteilung : Zur Verbreitung und Systematik einiger Landasselai des Mittelmeergebietes. *Zool. Anz.* **154** 1955 : 30–36 7 figs.

**Schmoelzer**, K. *see* Bator & Schmoelzer **68**.

**708.—Schulz**, E. *Angeliera phreaticola* auf Ischia. Ein Beitrag zur Kenntnis und Verbreitung der Microparasellidae. *Kieler Meeresforsch.* **10** 1954 : 253–260 30 figs.

**709.—Schulz**, E. *Jaera petiti* nov. spec., ein neuer Isopode von der französischen Mittelmeer-Küste. *Vie et Milieu* **4** 1 1954 : 59–64 2 figs.

**710.—Schuster**, O. Zwei neue Crustaceen von der pazifischen Küste Mittel-Amerikas (Amphipoda und Isopoda). *Senckenbergiana Biologica* **35** 1–2 1954 : 103–105 2 figs.

**Schwartz**, H. M. *see* Novellie & Schwartz **595**.

**711.—Schwartzkopff**, J. Pulsfrequenzen von Garnelen. *Naturwissenschaften* **40** 23 1953 : 609.

712.—**Sebestyén, O.** Quantitative plankton studies in Lake Balaton. II. Decennial changes. Ann. Inst. Biol. Tibany **21** 1953 : 63–89 16 figs. [English summary].

713.—**Segerstråle, S. G.** The freshwater amphipods, *Gammarus pulex* (L.) and *Gammarus lacustris* G. O. Sars, in Denmark and Fennoscandia—a contribution to the Late- and Post-glacial immigration history of the aquatic fauna of Northern Europe. Soc. sci. Fennica comm. Biol. **XI** 1 1954 pp. 1–92 figs.

714.—**Seitz, I.** Jahreszeitliche Schwankungen in Geschlechtsverhältnis freilebender Populationen von *Asellus aquaticus* L. Zool. Anz. **153** 1954 : 269–275 1 fig.

715.—**Šenk, O.** *Basanistes huchonis* (Schrank) na mladicama naší vodě *Basanistes huchonis* (Schrank) an den Huchen unsere Gewässer. Ann. Inst. biol. Sarajevo **4** 1 1951 : 51–58 6 figs. [German summary].

716.—**Seno, J. and Konno, K.** On *Platymaja alcocki* Rathbun (Brachyura Oxyrhyncha) obtained from off Amatsu, Province Boshu, Japan. J. Tokyo Univ. Fish. **41** 1954 : 85–88 1 pl. 1 fig.

717.—**Serène, R.** Observations biologiques sur les stomatopodes. Ann. Inst. Océanogr. Paris N.S. **29** 1 1954 : 1–93 9 pls. 15 figs. and Mem. Inst. océanogr. Nhatrang **8** 1954 1–91 10 pls. 15 figs.

718.—**Serène, R.** Sur la collection des Stomatopodes de l'Institut Oceanographique de l'Indochine. Proc. 7th Pacif. sci. Congr. **4** 1953 : 506–508.

719.—**Serène, R.** Sur quelques espèces rares de Brachyures (Leucosidae) de l'Indo-Pazifique. Treubia **22** 1954 : 453–499 4 pls. 7 figs.

**Shah, V. C.** see George & Shah, 291–292.

720.—**Shanes, A. M. and Hopkins, H. S.** Effect of potassium on "nesting potential" and respiration of crab nerve. J. Neurophysiol. **11** 1948 : 331–342 (See Contr. Bermuda biol. Sta. No. 141).

721.—**Sheard, K.** Continuous cray-fishing tests, 1947–1948, and their

application to the management of the crayfishery in Western Australia. Fish. Bull. W. Aust. No. 5 1954 : 1–54 12 figs.

722.—**Sheard, K.** Taxonomy, distribution and development of the Euphausiacea (Crustacea). Rep. B.A.N.Z. Antarct. res. Exped. 1929–31 **8B** 1 1953 : 1–72 17 figs.

**Sheard, K.** see George, R. W. & Sheard, K. 293.

723.—**Shen, C. J.** On two species of amphipod crustacea from Yunnan, China. Acta zool. sinica **6** 1 1954 : 15–22 figs.

724.—**Shiino, S. M.** A new fresh-water entoniscid isopod *Entionella okayamaensis* sp. nov. Rep. Fac. Fish. Prefac. Univ. Mie 1 No. 3 1954 : 239–246 figs.

725.—**Shiino, S. M.** On *Sarcotaces* Olsson, the genus of parasitic copepod, found in Japan. Ann. Rep. Prefect. Univ. Mie Sect. 2. Nat. Sci. **1** No. 2 1953 171–183 4 figs. [Japanese with English summary].

726.—**Shiino, S. M.** On *Caligus triangularis* n. sp., a copepod parasitic on *Halichoeres poecilopterus* (T. & S.). Annot. zool. jap. **27** 1954 : 146–149 1 fig.

727.—**Shiino, S. M.** A new fish-louse found on the mackerel pike. Annot. zool. jap. **27** 1954 : 150–153 1 fig.

728.—**Shiino, S. M.** A new fish-louse found on *Zenopsis nebulosa* (T. & S.). Annot. zool. jap. **27** 1954 : 154–156 1 fig.

729.—**Shiino, S. M.** On the male form of the copepod *Caligus katwae* Yamaguti, parasitic on the Japanese bonito *Euthynnus pelamys* L. Zool. Mag. Tokyo **63** 1954 : 246–249 12 figs.

730.—**Shiino, S. M.** Note on a new parasitic copepod, *Caligus brevis* n. sp. Bull. Jap. Soc. sci. Fish. **20** 1954 : 178–183 2 figs.

731.—**Shiino, S. M.** Record on *Caligus dieuzeidei* Brian newly found in Japan. Bull. Jap. Soc. sci. Fish. **20** 1954 : 268–272 2 figs.

**Shiraishi, Y.** see Kurasawa, Kitazawa & Shiraishi 443.

732.—**Shtcherbakov, A. P.** and **Muragina, T. A.** [Intensity of respiration in *Apus cancriformis*]. Zool. Zh., Moscow 32 5 1953 : 844–847. [In Russian].

733.—**Shulman, R. E.** [Parasitic fauna of economic fish in the White Sea]. Trud. gel'mintol. Labor. 4 1950 : 275–278. [In Russian].

734.—**Shulman, S. S.** [Specificity of fish parasites]. Zool. Zh., Moscow 33 1 1954 : 14–25. [In Russian].

735.—**Sieber, R.** Eozäne und oligozäne Makrofaunen Österreichs. S.B. öst. Akad. Wiss. Abt. I 162 5 1953 : 359–376.

736.—**Siewing, R.** Morphologische Untersuchungen an Tanaidaceen und Lophogastriden. Z. wiss. Zool. 157 1954 : 333–426 44 figs.

**Sigal, J.** see Cheylan, Magné, Sigal & Gregoff 179.

737.—**Silén, L.** Notes on lateral organs in peracardian crustacea. Acta zool. Stockh. 35 1954 : 1–10 19 figs.

738.—**Silén, L.** On the circulatory system of the Isopoda Oniscoidea. Acta zool. Stockh. 35 1954 : 11–70 50 figs.

739.—**Simon, W.** and **Dahmer, G.** *Zygobolba corbis* (Ostrac.) Leitmarke für den Beginn des Mittel-Devons im Oberharz. Senckenbergiana 34 4–6 1954 : 235–245 9 figs.

740.—**Sivertsen, E.** Oldinger blant hummer og krabber. En hummer med "øyenhulene" gjenvokset av blåskjell. K. norske Vidensk. Selsk. Årbok 1952 1953 : 117–121 3 figs.

741.—**Sládeček, V.** On the thelmatoplancton of the old river arm Škrabalka at Lipník nad Bečvou (Moravia). Přírod. Sborn. Ostravsk. Kraje 15 4 1954 : 581–

742.—**Smaridge, M. W.** Iron excretion by *Daphnia* during haemoglobin loss. Nature, London 173 1954 : 782–783.

**Smirnova, R. B.** see Samoilova, Smirnova & Fomina 691.

**Smith, F. E.** see Grosser, Baylor & Smith 313.

743.—**Smith, F. G. W.** Biology of the spiny lobster. Fish. Bull. U.S. 55 1954 : 463–465.

**Smyly, W. J. P.** see Fryer & Smyly 284.

744.—**Snodgrass, R. E.** A textbook of Arthropod anatomy, New York & London (Constable & Co.) 1952 pp. X + 363 88 figs.

**Sokoloskaya, A. A.** see Graizer, Obruchev & Sokoloskaya 311.

745.—**Southward, A. J.** and **Crisp, D. J.** The distribution of certain intertidal animals around the Irish coast. Proc. R. Irish. Acad. 57B 1 1954 : 1–29 10 figs.

746.—**Southward, A. J.** and **Crisp, D. J.** Recent changes in the distribution of the intertidal barnacles *Chthamalus stellatus* Poli and *Balanus balanoides* L. in the British Isles. J. Anim. Ecol. 23 1954 : 163–177 7 figs.

747.—**Southward, A. J.** and **Orton, J. H.** The effects of wave-action on the distribution and numbers of the commoner plants and animals living on the Plymouth breakwater. J. Mar. biol. Ass. U.K. 33 1 1954 : 1–19 7 figs.

748.—**Spencer, J. O.** and **Edney, E. B.** The absorption of water by woodlice. J. exp. Biol. 31 4 1954 : 491–496 1 fig.

749.—**Šrámek-Hušek, R.** Die Cyclopiden des Winterplanktons. Mém. Soc. zool. tchéosl. 18 1954 : 225–259 86 figs.

750.—**Stallcup, W. B.** Distribution of the barnacle *Chthamalus dalli* Pilsby at Cabrillo Point, Monterey Bay California. Field & Lab. 21 4 1953 : 143–146.

**Stammer, H. J.** see Noll & Stammer 588.

**Steinberg, J. E.** see Dougherty & Steinberg 233.

751.—**Stekhoven, J. H. S., Jr.** and **Montague, J. T. W.** Zur Kenntnis der allgemeinen Biologie, besonders der Darmbewegungen von *Lernaeocera-* Arten (Copepoda parasitica). Z. Parasitenk. 16 3 1954 : 209–213.

752.—**Stella, E. and Salvadori, F. B.** La fauna acquatica della grotta "di punta degli Stretti" (Monte Argentario). Arch. zool. ital. Napoli **38** 1954 : 441–483 2 pls.

753.—**Stephenson, K. and Hynes, H. B. N.** Notes on some Belgian freshwater and brackish water Gammarus. Vidensk. Medd. dansk. naturh. Foren. Kbh. **115** 1953 : 289–304 4 figs.

754.—**Stephenson, W.** Three new stomatopoda (Crustacea) from Eastern Australia. Aust. J. mar. freshw. Res. **4** 1 1953 : 201–218 4 figs.

755.—**Stephenson, W.** Notes on the Australian Stomatopoda (Crustacea) in the collections of the Queensland Museum. Mem. Qd. Mus. **13** 1 1953 : 40–49.

756.—**Štěrba, O.** Über *Bathynella chappuisi* Delachaux und andere Krebstiere der Brünner Brunnen. Čas. moravsk. Mus. **39** 1954 : 164–173 21 figs. [German summary].

757.—**Stich, H.** Stoffe und Strömungen in der Spindel von *Cyclops strenuus*. Ein Beitrag zur mechanik der mitose. Chromosoma **6** 3 1954 : 199–236 29 figs.

758.—**Stock, J. H.** Redescription de *Tococheres cylindraceus* Pelseneer, 1929, Copépode commensal de *Loripes lacteus*. Beaufortia **4** 38 1954 : 73–80 23 figs.

759.—**Stone, A.** Objection to the proposed use of the plenary powers to suppress the generic name *Iphis* Meigen, 1800 for the purpose of validating the generic name *Iphis* Leach, 1817. Bull. zool. Nom. **11** 1955 : 82.

759a.—**Straskraba, M.** Note préliminaire sur la distribution du genre *Gammarus* dans la Tchécoslovaquie. Mém. Soc. zool. tchéosl. **17** 1953 : 212–227 2 pls. 4 figs.

760.—**Strouhal, H.** Die cylisticina (Isop. terr.) der Türkei (1. Beitrag zur Kenntnis der türkischen-isopoden). Rev. Fac. Sci. Univ. Istanbul **18B** 3–4 1953 : 353–372 26 figs.

761.—**Strouhal, H.** Zoologische Studien in West-Griechenland. II. Teil. Süßwasser-Isopoden. S.B. öst. Akad. Wiss. Abt. I **163** 1–2 1954 : 10–44 figs.

762.—**Strouhal, H.** Isopodenreste aus der Altplisto-zänen Spaltenfüllung von Hundsheim bei Deutsch-Altenburg (Niederösterreich). S.B. öst. Akad. Wiss. Abt. I **163** 1–2 1954 : 51–61 2 pls. 7 figs.

763.—**Strouhal, H.** Bemerkungen zu einigen österreichischen *Trichoniscus*-Arten (Isop. terr.). Verh. zool. bot. Ges. Wien **93** 1954 : 46–56 14 figs.

**Strouhal, H.** see Mathes & Strouhal **538**.

**Suenaga, G.** see Hoshina & Suenaga **383**.

764.—**Sukô, T.** Studies on the development of the crayfish. II. The development of egg-cell before fertilization. Sci. Rep. Saitama Univ. **1B** 3 1954 : 165–175 1 pl. 3 figs.

765.—**Sutcliffe, W. H., Jr.** Further observations on the breeding and migration of the Bermuda spiny lobster, *Panulirus argus*. J. mar. Res. **12** 2 1953 : 173–183 4 figs.

766.—**Sutcliffe, W. H.** Some observations on the breeding and migration of the Bermuda spiny lobster, *Panulirus argus*. Proc. Gulf Carib. Fish. Inst. No. 4 1952 : 64–69. (See Contr. Bermuda biol. Sta. No. 180).

767.—**Taberly, G.** Étude morphologique d'un Dajidae peu connu : *Prodajus lobiancoi* Bonnier (Crust. Isop. Epicaridi). I.—L'épicaridium de *P. lobiancoi* et remarques générales sur l'épicaridium des Dajidae. II. Le cryptoniscium de *P. lobiancoi* et sa mue forme connue de cryptoniscium de Dajidae. Bull. Inst. océanogr. Monaco No. 1045 1954 : 1–12 6 figs. No. 1049 1954 : 1–15 11 figs.

**Takata, M.** see Reel, Randall & Takata **854**.

**Tampi, P. R. S.** see Prasad & Tampi **648**.

768.—**Taramelli, E.** La posizione sistematica dei Termosbenacei quale resulta dallo studio anatomico di *Monodelphus argentarius* Stella. Monit. zool. ital. **62** 1954 : 9–27 3 pls.

769.—**Tattersall, O. S.** Shallow-water Mysidacea from the St. Lawrence estuary, Eastern Canada. Canad. Fld. Nat. **68** 4 1954 : 143–154 figs.

**770.**—**Teixeira, C.** Acerca dos filópodes fósseis do Karroo da escarpa do Quela (Angola). Ann. Jta Invest. colon., Lisbon 2 2 1947 : 29–40 6 pls.

**771.**—**Teixeira, C.** Nota sobre *Estheria anchietae* Teix. do Karroo do Lutôe. Ann. Jta Invest. colon., Lisbon 2 2 1947 : 41–43 3 pls.

**772.**—**Teixeira, C.** Contribuição para o conhecimento geológico do Karroo da África Portuguesa. II. Acerca dos filópodes fósseis do Karroo da escarpa do Quela (Angola). Ann. Jta Invest. colon. Lisboa 2 2 1947 pp. 9–40 figs.

**773.**—**Tenerelli, V.** Osservazioni biologiche su alcuin Cirripedi del gen. *Cithalamus* Rauz con particolare riguardo ai feuomeni d'anabiosi Atti Accad. gioenia (6) 9 1954 : 92–122 1 pl.

**774.**—**Termier, H. and Termier, G.** Historie Géologique de la Biosphère Paris 1952 pp. 721 pls. 1–8 117 text-figs.

**Tessier, F.** see Remy & Tessier 665.

**Thenius, E.** see Papp & Thenius 607.

**775.**—**Thiébaud, M.** Entomos-tracés de la région bennose, plus spécialement de la Vieille-Thièle à Meienreied. Bull. Soc. neuchâtel. Sci. nat. (3) 77 1954 : 143–144.

**776.**—**Thienemann, A.** Zivot u Slatkojvodi. Uvod u limnologiju. (Das Leben im Süßwasser. Eine Einführung in die biologischen Probleme der Limnologie). Zagreb, 1953 pp. 96 35 figs.

**Thomas, A.** see Airan & Thomas 13.

**777.**—**Thomas, H. J.** The efficiency of the Cornish Pot and the Scottish Creel in the capture of lobsters and crabs. J. Cons. int. Explor. Mer 20 1954 : 87–91 1 fig.

**778.**—**Thomas, H. J.** The oxygen uptake of the lobster (*Homarus vulgaris* Edw.). J. exp. Biol. 31 2 1954 : 228–251 14 figs.

**779.**—**Thomas, I. F.** Crustacea. Rep. nat. Hist. Soc. Oundle Sch. 1953 [1954] : 15.

**780.**—**Thomasson, K.** Plankton aus den Seen Orlängen und Tre-

hörningen. Acta Phytogeogr. Suecica 32 1953 : 51–60 5 text-figs.

**781.**—**Thomasson, K.** Studien über das südamerikanische Süßwasserplankton. Ark. Zool. 6 1954 : 189–194 3 figs.

**Thompson, S. Y.** see Fisher, Kon & Thompson 266.

**782.**—**Tiews, K.** Die biologischen Grundlagen der Büsumer Garnelenfischerei. Ber. dtsh. Komm. Meeresforsch. 13 1954 : 235–269 11 figs.

**783.**—**Timet, D.** Studies on the fervor-effect on animal organisms. I. About the influence of the fervorised water on the heart-beat of *Daphnia*. Bull. int. Acad. jugosl. Sci. N.S. No. 10 1953 : 113–122 4 figs. (See S. 1705. A. Radjugosl. Akad. No. 294 pp. 169–).

**Timet, D.** see Vatovec & Timet 822.

**784.**—**Tiwari, K. K.** The morphology of *Nichollisia kashiense* Chopra and Tiwari (Crustacea : Isopoda Phreatocoidea). Proc. Indian Acad. Sci. 35B 2 1952 : 69–77 1 pl. 1 fig.

**785.**—**Tiwari, K. K.** On a new species of the rare Cymothoid genus *Agarna* Schi. & Mein., parasitic on the clupeid fish *Nematalosa nasus* (Bl.) in the Bay of Bengal. Rec. Indian Mus. 50 1953 : 295–300 1 pl. 2 figs.

**786.**—**Tokioka, T.** Invertebrate fauna of the intertidal zone and the Tokara islands. I. Introductory notes, with the outline of the shore and the fauna. II. Record of the stranded floating animals. Publ. Seto mar. biol. Sta. 3 2 1953 : 123–139 3 pls.

**787.**—**Tokioka, T.** Invertebrate fauna of the intertidal zone and the Tokara islands. IV. Preliminary list of the collection of Brachyura and Stomatopoda. Publ. Seto mar. biol. Sta. 3 2 1953 : 141–143 1 fig.

**788.**—**Tokioka, T.** Record of a Scyllarid *Phyllosoma* near Seto. Publ. Seto mar. biol. Lab. 3 3 1954 : 361–368 3 pls. 2 figs.

**789.**—**Tonolli, V.** Stabilità e produttività del limnobio alpino. Mem. Ist. ital. Idrobiol. de Marchi 8 1954 : 29–70. [English summary].

**Tonolli, V.** see Bossoni & Tonolli 110.

790.—**Torii**, H. Fauna der Ryu-gado Sinterhöhle in Kochi Präfektur. (Die Berichte der speläobiologischen Expeditionen VI). *Annot. zool. jap.* **26** 1953 : 246–255 5 figs.

**Torrie**, A. W. See Cunningham, Torrie & Parr 190.

791.—**Townsley**, S. J. Adult and larval stomatopod Crustaceans occurring in Hawaiian Waters. *Pacif. Sci.* **7** 4 1953 : 399–437 28 figs.

792.—**Travis**, D. F. The molting cycle of the spiny lobster, *Panulirus argus* Latreille. I. Molting and growth in laboratory maintained individuals. *Biol. Bull. Woods Hole* **107** 1954 : 433–450 12 figs.

**Tremblay**, J.-L. see Filteau & Tremblay 262.

793.—**Tressler**, W. L. Marine ostracoda. *Fish. Bull. U.S.* **55** 1954 : 429–437.

794.—**Tressler**, W. L. Fresh-water Ostracoda from Texas and Mexico. *J. Wash. Acad. Sci.* **44** 5 1954 : 138–149 48 figs.

794a.—**Troiani**, D. La consommation d'oxygène de quelques Gammaridae. *C.R. Acad. Sci. Paris* **239** 1954 : 1540–1542.

**Troshin**, A. C. see Rodina & Troshin 673.

795.—**Trueman**, A. The Coalfields of Great Britain 1954 pp. X 396 7 plates many text-figs.

796.—**Tryon**, C. A., Jr. and **Jackson**, D. F. Summer plankton productivity of Pymatuning Lake, Pennsylvania. *Ecology* **33** 1952 : 342–350.

797.—**Turishchev**, I. E. [Lower-Cretaceous deposits of South-eastern part of the Mongolian Republic]. *C.R. Acad. Sci. URSS. n.s.* **99** (3) 1954 : 445–448. [In Russian].

798.—**Tuzet**, O. and **Ormières**, R. Sur un Pharodes (Copépode Chondracanthidae) parasite de *Blennius pavo* Risso. *Vie et Milieu* **5** 1 1954 : 71–73 5 figs.

799.—**Tweedie**, M. W. F. Notes on Grapsoid Crabs from the Raffles Museum. *Bull. Raffles. Mus.* No. 25 1954 : 118–128 1 fig.

800.—**Ueno**, M. The Bathynellidae of Japan (Syncarida-Bathy-

nellacea). *Arch. Hydrobiol.* **49** 4 1954 : 519–538 8 figs.

801.—**Uhlmann**, P. Zur Kenntnis der natürlichen Nahrung von *Daphnia magna* und *Daphnia pulex*. *Z. Fisch.* **3** 1954 : 449–478 16 figs.

802.—**Urbani**, E., **Russo**, S. and **Rognone**, L. Osservazioni sulla vita latente.—III. Studio delle amilasi di "Artemia salina" L. *R.C. Acad. Lincei* (8) **14** 5 1953 : 697–701 6 figs.

803.—**Ussing**, H. Snylende copepoder og Karpelusen. *Flora og Fauna* **59** 4–5 1953 : 107–110 2 figs.

804.—**Utinomi**, H. Coral-Dwelling organisms as destructive agents of corals. *Proc. Seventh Pacific Sci. Congr.* 4 1954 pp. 533–536.

**Vaillant**, F. see Dorier & Vaillant 232.

805.—**Vaissière**, R. Description de *Acartia (Acanthacartia) Ransonni* Rose 1953, Copépode pélagique des lagons des îles Tuamotu. *Bull. Mus. nat. Hist. nat.*, Paris **26** (2) 3 1954 : 358–362 17 figs.

806.—**Vaissière**, R. L'oeuil ventral de la femelle de *Pontellopsis regalis* Dana (Copépode Pontellide). *C.R. Acad. Sci. Paris* **238** 1954 : 942–944 1 fig.

**Vaissière**, R. see Rose & Vaissière 680–681.

807.—**Vandel**, A. Les isopodes terrestres des provinces d'Almeria et de Granada. *Arch. Inst. Aclim.* **1** 1953 : 45–77 3 pls. 24 figs.

808.—**Vandel**, A. Mission J. Cadenat aux îles du Cap-Vert. Isopodes terrestres. *Bull. Inst. franç. Afr. N.* **16A** 2 1954 : 466–478 3 figs.

809.—**Vandel**, A. Description d'une nouvelle espèce de *Bathytropa*, *B. colasi* n. sp. (Crustacés : Isopodes terrestres). *Bull. Mus. nat. Hist. nat. Paris* (2) **26** 1 1954 : 80–84 1 fig.

810.—**Vandel**, A. Le statut systematisqué de trois Porcellions de l'Espagne orientale (Crustacés ; Isopodes terrestres). *Bull. Mus. nat. Hist. nat. Paris* (2) **26** 4 1954 : 491–495 1 fig.

811.—**Vandel**, A. Sur une espèce mal connue d'isopode terrestre, *Phallo-niscus pygmaeus* (B.-L.). (*Philoscia pygmaea* B.-L.) (Crustacé). *Bull. Mus. nat. Hist. nat. Paris* (2) **26** 6 1954 : 226–230 4 figs.

**812.**—**Vandel**, A. Étude des isopodes terrestres recueillis aux îles Canaries. Mem. Mus. nat. Hist. nat. Paris (A) Zool. **81** 1954 : 1–60 figs.

**813.**—**Vandel**, A. L'évolution considérée comme phénomène de développement. Bull. Soc. zool. Fr. **79** 4 1954 : 341–356 figs.

**814.**—**Vandel**, A. Note sur deux Armadillidiidae endogés et cavernicoles de la région de Grasse. Notes Biospéologiques **9** 1954 : 49–60 figs.

**815.**—**Vandel**, A. Une nouvelle espèce cavernicole appartenant à la famille des Armadillidiidae et provenant de l'Espagne orientale. Notes Biospéologiques **9** 1954 : pp. 61–66 figs.

**816.**—**Vandel**. Une nouvelle espèce cavernicole de *Trichoniscoïdes*, *T. drescoi* sp. nov. provenant des Asturies. Notes Biospéologiques **9** 1954 : 67–69.

**817.**—**Vandel**, A. Les Trichoniscides endogés et cavernicoles appartenant au genre *Nesiotoniscus* Racovitzá. Notes Biospéologiques **9** 1954 : 149–156 figs.

**818.**—**Vandel**, A. A new terrestrial isopod from Oregon, *Caucasonethes rothi* n. sp. Pacif. Sci. **72** 1953 : 175–178 2 figs.

**819.**—**Vandel**, A. Le peuplement isopodique de la Corse ; étude biogéographique. Rev. Franç. d'entom. **21** 1 1954 : 72–84.

**820.**—**Vandel**, A. *Nesiotoniscus delamarei* n. sp. (Crustacé—isopode terrestre). Vie et Milieu **4** 4 1953 : 664–668 2 figs.

**Vandel**, A. see Cassagnau, Coiffait & Vandel **182**.

**821.**—**Van Weel**, P. B. Processes of secretion, restitution, and resorption in gland of mid-gut (glandula media intestini) of *Atya spinipes* Newport. Physiol. Zool. **28** 1955 : 40–54 10 figs.

**822.**—**Vatovec**, S. and **Timet**, D. About the influence of vertebrates sera on the heart-beat of *Daphnia*. Bull. int. Acad. jugosl. N.S. No. 7 1952 : 93–101 5 figs. (See S. 1705, A. Rad. Jugosl. Akad. No. 289 1952 : 207–).

**Vénèque**, R. see Heldt, J. H. & Vénèque, R. **348**.

**Vevers**, H. G. see Kennedy & Vevers **428**.

**823.**—**Viktorova**, R. E. and **Kovalevski**, S. A. [Aktchagil in Moldavia]. C.R. Acad. Sci. URSS. n.s. **94** 4 1954 : 737–740. [In Russian].

**824.**—**Villkanov**, A. K. [The accessory nuclei in the eggs of Branchiopods. C.R. Acad. Sci. URSS n.s. **96** 1 1954 : 221–224 4 figs. [In Russian].

**825.**—**Villalobos**, F. A. Estudios de los Cambarinos mexicanos. XI. Una nueva subespecie de *Procambarus simulans* del Estado de Nuevo Leon. XII. Part 1. Revision de las especies afines a *Procambarus mexicanus* (Erichson), con descripción de nuevas formas. An. Inst. Biol. Univ. Méx. **25** 1954 : 289–379 2 pls.

**826.**—**Vinogradov**, M. E. [Vertical distribution of biomass of the Zooplankton in Kuril-Kamchatka depression]. C.R. Acad. Sci. URSS. n.s. **96** 3 1954 : 637–640 2 figs. [In Russian].

**827.**—**Vinogradov**, A. P. The elementary chemical composition of marine organisms. Mem. Sears Fdn. Mar. Res. **2** 1953 : 375–413. [Translation from Russian 1935–1944].

**Volkman**, C. see Beerstecher, Cormyn, Volkman, Cardi & Harker **72**.

**828.**—**Vos**, A. P. C. de. Three new commensal Ostracods from *Limnoria lignorum* (Rathke). Beaufortia **4** 34 1953 : 21–31 7 figs.

**829.**—**Walton**, B. C. The genus *Pylopagurus* (Crustacea : Anomura) in the Pacific with descriptions of two new species. Allan Hancock Pacif. Exped. **18** 2 1954 : 139–173 5 pls.

**831.**—**Waugh**, G. D. The occurrence of *Mytilicola intestinalis* (Steuer) on the east coast of England. J. Anim. Ecol. **23** 1954 : 364–367 1 fig.

**832.**—**Wawrik**, F. Limnologische Studien an Hochgebirgs-Kleingewässern im Arlberggebiet I. S.B. öst. Akad. Wis. Abt. I **163** 4–5 1954 : 277–296 2 pls. 5 figs.

**833.**—**Webb**, H. M., **Bennett**, M. F. and **Brown**, F. A. Jr. A persistent diurnal rhythm of chromatophoric response in eyestalkless *Uca pugillator*. Biol. Bull. Woods Hole **106** 1954 : 371–377 2 figs.

**Webb**, H. M. *see* Bennett, Brown & Webb 141, Brown & others 143.

**834.**—**Weel**, P. B. van, **Randall**, J. E. and **Takata**, M. Observations on the oxygen consumption of certain marine Crustacea. *Pacif. Sci.* **8** 2 1954 : 209–218 7 figs.

**835.**—**Weibezahn**, F. H. Observaciones preliminares sobre una pesca experimental de camarones en la costa del Estado Anzoategui. *Bol. Pesc. Caracas No. 1* 1952 : 1–16 7 figs.

**836.**—**Wellman**, H. H. and **Brodie**, J. W. A note on the geology of the Cape Palliser, New Zealand (sheet No. 168). *N.Z. J. Sci. Tech.* **35B** 5 1954 : 440–450 4 figs.

**837.**—**Wellman**, H. H., **Reed**, J. J., **Fleming**, C. A. and **Hornibrook**, N. de B. Marine Pliocene at Resolution Island, Dusky Sound, Fiordlan (S156). *N.Z. J. Sci. Tech.* **35B** 5 1954 : 378–385 21 figs.

**Wells**, P. H. *see* Goldman & Wells 302.

**Welsh**, J. H. *see* Bliss, Durand & Welsh 89.

**838.**—**Wesenberg-Lund**, C. J. De Danske Søers og Dammes dyriske Plankton, København (Einar Munksgaard) 1952 pp. viii + 182 27 pls.

**839.**—**Westermann**, J. H. Nature preservation in the Caribbean. A review of literature on the destruction and preservation of flora and fauna in the Caribbean area. *Natuurwet. Stud. Suriname No. 9* 1953 : 1–106 25 figs. map.

**Whitman**, D. C. *see* Kozloff & Whitman 457.

**840.**—**Wiborg**, K. F. Investigations on zooplankton in coastal and offshore waters of western and northwestern Norway. *Fiskeridir. Skr. Havundersok. 11* No. 1 1954 : 1–246 102 figs.

**841.**—**Wiersma**, C. A. G. and **Ripley**, S. H. Further functional differences between fast and slow contractions in certain crustacean muscles. *Physiol. comp.* 3 1954 : 327–336 3 figs.

**842.**—**Wikgren**, B. Osmotic regulation in some aquatic animals with special reference to the influence of temperature. *Acta zool. fenn.* **71** 1953 : 1–102 26 figs.

**843.**—**Williams**, A. B. An explanation for the distribution of a North American Crayfish. *Ecology* **35** 4 1954 : 573–575 map.

**844.**—**Williams**, A. B. Speciation and distribution of the crayfishes of the Ozark Plateaus and Ouachita Provinces. *Kans. Univ. Sci. Bull.* **36** 2 1954 : 803–918 253 figs.

**845.**—**Williams**, G. Fauna of Strangford Lough and neighbouring coasts. *Proc. R. Irish Acad.* **56B** 3 1954 : 29–133 3 pls.

**846.**—**Williamson**, D. I. Landwards and seawards movements of the sand-hopper, *Talitrus saltator*. *Advanc. Sci., Lond.* **11** 41 1954 : 71–73.

**847.**—**Wilson**, E. Zoological Notes—Spiny Lobster off Scottish coast. *Scot. Nat.* **66** 2 1954 : 121–.

**848.**—**Wilson**, M. S. A new species of *Diaptomus* from Louisiana and Texas with notes on the subgenus *Leptodiaptomus*. *Tulane Stud. Zool.* **2** 1954 : 51–60 8 figs.

**849.**—**Winkler**, E. M. Statistical methods and techniques for the measurement of average index ratios of Ostracod carapaces. *Amer. Midl. Nat.* **52** 1 1954 : 149–153 3 figs.

**850.**—**Winkler**, O. *Candonia hyalina* Brady & Robertson, a new Ostracod for Czechoslovakia. *Mém. Soc. zool. tchécosl.* **18** 1954 : 214–216 4 figs.

**851.**—**Wolff**, T. Tre østamerikanske krabber fundet i Danmark. *Flora og Fauna* **60** 1–2 1954 : 19–34 5 figs. [English summary].

**852.**—**Wolff**, T. Occurrence of two East American species of crabs in European waters. *Nature, Lond.* **174** 1954 : 188–189 1 fig.

**853.**—**Woods**, J. T. Brachyura from the Cretaceous of Central Queensland. *Mem. Qd. Mus.* **13** 1 1953 : 50–57 1 pl. 3 figs.

**854.**—**Woznárovich**, E. Vorkommen der *Limnomyysis benedeni* Czern. im ungarischen Donauabschnitt. *Acta zool., Budapest* **1** 1954 : 177–185 2 figs.

**855.**—**Yaldwyn**, J. C. Studies on *Palaemon affinis* M.-Edw. 1837 (Crustacea, Decapoda, Natantia.) Part I. Synonymy and external morphology. *Trans. roy. Soc. N.Z.* **82** 1 1954 : 169–187 17 figs.

**855a.**—**Yaldwyn, J. C.** *Nephrops challengerii* Balss, 1914 (Crustacea, Decapoda, Reptantia) from New Zealand and Chatham Island waters. Trans. roy. Soc. N.Z. **82** 3 1954 : 721-732 2 figs.

**856.**—**Yamaguti, S.** Parasitic copepods from fishes of Japan. Part 7. Cyclopoida, III and Caligoida, IV. Publ. Seto mar. biol. Sta. **3** 2 1953 : 221-231 5 pls.

**857.**—**Yamaguti, S.** Parasitic copepods from fishes of Celebes and Borneo. Publ. Seto mar. biol. Lab. **3** 3 1954 : 375-398 6 pls.

**858.**—**Yamamoto, Y.** Studies on the sinus gland in the decapod crustaceans. I. Effect of the sinus gland on the midgut-gland in the crayfish, *Cambarus clarkii*. J. Coll. Arts Sci. Chiba Univ. Nat. Sci. Ser. **1** 2 1953 : 115-117 8 figs.

**859.**—**Yamazi, I.** Plankton investigation in inlet waters along the coast of Japan. IX. The plankton of Onagawa Bay on the eastern coast of Tōhoku district. X. The plankton of Kamaisi Bay on the eastern coast and Tōhoku district. Publ. Seto mar. biol. Sta. **3** 2 1953 : 173-204 26 figs.

**860.**—**Yamazi, I.** Plankton invertebrates in inlet waters along the coast of Japan. XI. The plankton of Kozima Bay in the Seto-Naikai (Inland Sea). XII. The plankton of Niyako Bay on the eastern coast of Tōhoku district. Publ. Seto mar. biol. Lab. **3** 3 1954 : 399-441 49 figs.

**861.**—**Zariquey Alvarez, R.** Decápodos españoles VII. Algo sobre *Hippolytidae* de las costas N.E. de España. Publ. Inst. Biol. apl. Barcelona **13** 1953 : 103-109 8 figs.

**862.**—**Zhuravel, P. A.** [Fauna of invertebrates in liman complex of the lower part of Southern Bug river and Alexandrovsk Reservoir]. Zool. Zh., Moscow **32** 3 1953 : 380-383. [In Russian].

**863.**—**Zinn, D. J.** Pruritus produced by the Zooea larvae of one of the porcelain crabs. J. Parasit. **40** 2 1954 : 233-234.

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*Cyamus catodontis* sp. nov. from a sperm whale off British Columbia. J. Fish. Res. Bd. Can. 11 1954 : p. 320, figs., MARGOLIS 523b ; *C. erraticus*, *C. boopis*, *C. catodontis*, *C. ceti*, figs., and other spp., MARGOLIS 523.

*Dodecas hexacentrum*, figs., *D. tasmaniensis* p. 542, *D. grandimanus* p. 546, figs., spp. nov. Tasmania. Ann. Mag. nat. Hist. (12) 7 1954 : GUILER 316.

*Neocyamus* gen. nov., p. 131, for *Cyamus physeteris* (Pouchet) figs., J. Fish. Res. Bd. Can. 12 1955 : MARGOLIS 523.

*Orthoprotella gordoni* p. 548. *O. tasmaniensis* p. 551, spp. nov. figs., Tasmania. Ann. Mag. nat. Hist. (12) 7 1954 : GUILER 316.

*Perotriplus* gen. nov. for *P. brevis* (La Follette), p. 43, Californian seas. Proc. biol. Soc. Wash. 66 1953 : DOUGHERTY & STEINBERG 233.

*Proto tuberculata* sp. nov. p. 537, figs., Tasmania. Ann. Mag. nat. Hist. (12) 7, GUILER 316.

*Tritella tenuissima* sp. nov. p. 41, Californian seas, Proc. biol. Soc. Wash. 66 1953 : DOUGHERTY & STEINBERG 233.

#### INGOLIELLIDEA

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### ASELLOTA

*Angeliera* gen. nov. p. 122, for *A. phreaticola* sp. nov. p. 123, Mediterranean. Arch. Zool. exp. gén. 91 1954: figs., CHAPPUIS & DELAMARE DEBOUTTEVILLE 175; *A. phreaticola ischiensis* var. nov. ? Italy. Kieler Meeresforsch 10 1954: 253, figs., SCHULZ 708.

*Asellus aquaticus*, coxal articulation of peraeopods, figs., GRUNER 314; physiology of heart, NEEDHAM 582; seasonal sex-ratio variation, SEITZ 714; behaviour, figs., LEENTVAAR 481; sense physiology, FISCHBACH 263; influences on development of incubatory pouch, BALESSENT-MARQUET 50; histology, physiology, etc., photos., ROCHE 671; *A. banyulensis*, influence of salinity on form, figs., ROUBAULT 682; *A. (Proasellus) coxalis cephalenus* A. (*Proasellus*) *coxalis leucadius*, *A. (Proasellus) coxalis epiroticus*, *A. (Proasellus) coxalis corcyraeus*, *A. (Proasellus) monodi*, all figd., Greece, STROUHAL 761; *A. coxalis*, *A. karamani*, figs., KARAMAN 424; *A. (Proasellus) monsferratus* sp. nov. Algeria. An. Fac. Ciênc. Pôrto. 34 1 1949: p. 55, figs., BRAGA 120; *A. tridentatus*, record from open stream habitat, DEXTER 221.

*Bagatus longimanus* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 19 (no fig.), PILLAI 632.

*Brevipleonida* gen. nov. for *B. gracilis* sp. nov. Madras (Microparasellidae). Ann. Mag. nat. Hist. (12) 7 1954: 258, figs., GNANAMUTHU 299.

*Ianiropsis breviremis*, structure, figs., MENZIES 554.

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*J. schellenbergi*, all figd., Jugoslavia. Acta adriat. 5 5 1953: KARAMAN 421; *J. petiti* sp. nov. France Mediterranean coast, Vie et Milieu 4 1 1954: p. 59, figs., SCHULTZ 709.

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*Microparasellus libanicus* p. 108, sp. nov. Mediterranean. Arch. Zool. exp. gén. 91 1954: figs., CHAPPUIS & DELAMARE DEBOUTTEVILLE 175; *M. puteanus*, figd., KARAMAN 425.

*Stenasellus skopljensis croatica*, figd., KARAMAN 425; *S. skopljensis meridionalis* form nov. p. 8, *S. skopljensis croaticus* sub. sp. nov. p. 10, *S. gjorgjevici*, all figd., Yugoslavia, Frag. Balcanica Mus. Mac. Sci. nat. 1 2 1954: KARAMAN 423.

*Stygasellus phreaticus*, descrip. figs., CHAPPUIS 168.

*Synasellus mariae*, descrip. figs., CHAPPUIS 168; *S. mateusi* sp. nov. Portugal. Mem. Mus. zool. Univ. Coimbra 223 1954: 1-10, figs., BRAGA 121.

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*Altropus dimorphus* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 8 (no fig.), PILLAI 632.

*Amblycephalon* gen. nov. (Cymothoidae) for *A. indicus* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 13 (no fig.), PILLAI 632.

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*Cassidiniae quadricarinata* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 12 (no fig.), PILLAI 632.

*Cerceis granulata* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 11 (no fig.), PILLAI 632.

*Cirolana bicarinata* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 6 (no fig.), PILLAI 632 ; *C. (Speocirolana) bolivari* sp. nov. Mexican caves, An. Inst. Biol. Mex. 24 1 1953 : 149, figs., RIOJA 669 ; *C. koepckeae* sp. nov. Peru, Senckenbergiana Biologica 35 1-2 1954 : 107, figs., BOTR 113 ; *C. (Speocirolana) sub. gen. nov.* p. 211, for *C. (Speocirolana) pelaezi* sp. nov. p. 212, Mexican caves, Ciencia, Mex. 10 1950 : figs., BOLIVAR Y PIELTAIN 95 ; *C. salvadorensis* sp. nov., El Salvador, Pacific Ocean, Senckenbergiana Biologica 35 1-2 1954 : 105, figs., SCHUSTER 710.

*Codonophilus hemiramphi* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 14 (no fig.), PILLAI 632.

*Creaseriella* (Cirolanidae) gen. nov. p. 161, for *C. anops* (Creaser) p. 162, Mexican Caves, An. Inst. Biol. Mex. 24 1 1953 : figs., RIOJA 669.

*Cymodocella magna*, p. 128, *C. entylos*, p. 129, spp. nov. S. Africa estuaries. Ann. Mus. Congo belg. N.S. Zool. 1 1954 : BARNARD 63.

*Cymothoa asymmetrica* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 15 (no fig.), PILLAI 632 ; *C. stromatei* photo., SACHLAN 690.

*Dynamenella quilonensis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 11 (no fig.), PILLAI 632.

*Dynoides amblysinus* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 11 (no fig.), PILLAI 632.

*Eurydice dollfusi* p. 277, figs., *E. cf. affinis* p. 277, figs., *E. pontica* p. 278, figs., all Mediterranean, 1953 : MONOD 567.

*Exosphaeroma*, systematics and ecology, etc., MENZIES 552.

*Gnorimosphaeroma* gen. nov. p. 5, for *G. oregonensis oregonensis* (Dana) p. 8, *G. oregonensis lutea* sub. sp. nov. p. 12, *G. insulare*, *G. noblei* sp. nov. p. 18, California. Amer. Mus. Novit. No. 1683, 1954 : figs., MENZIES 552.

*Ichthyoxenus jellinghausii*, photos., SACHLAN 690.

*Indusa ophueseni* p. 15, *I. pustulosa* p. 16, spp. nov. Travancore. Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : (no fig.), PILLAI 632.

*Irona robustus*, parasitic on *Tylosurus leirus*, *I. far* parasitic on *Hemirhauphus far* spp. nov. Madras. Proc. Ind. sci. Congr. 38 3 [1952] p. 213, GOPALAKRISHNAN NAIR 304.

*Limnoria*, Annelids as associates and predators, REISH 661 ; compar. biology of reproduction, figs., etc., MENZIES 553.

*Livoneca circularis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 17 (no fig.), PILLAI 632.

*Monilistra spinosa spinosissima*, figd., KARAMAN 425.

*Nerocila exocoeti* sp. nov. Travancore. Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 12 (no fig.), PILLAI 632.

†*Pleistosphaerominae* subfam. nov. †*Pleistosphaeroma* gen. nov. for *P. hundsheimensis* sp. nov. p. 57, Austria. S.B. öst Akad. Wiss. Abt. 1 163 1-2 1954 : STROHAL 762.

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*Sphaeroma annandalei travancorensis* var.  
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*Robustura* gen. nov. for type *R. predatori* sp. nov. Madras (Microcerebridae), Ann. Mag. nat. Hist. (12) 7 1954 : 264, figs., GNANAMUTHU 299.

#### VALVIFERA

*Astacilla gibossa* sp. nov. Travancore. Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 18 (no fig.), PILLAI 632.

*Iodea baltica basteri*, colour physiology, AMAR 19 ; *I. hectica*, *I. ochotensis*, *I. baltica*, coxal articulation of peraeopods, figs., GRUNER 314.

*Syndotea fluviatilis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954 : p. 18 (no fig.), PILLAI 632.

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*Alpioniscus* (*Alpioniscus*) *boldorii* sp. nov. Albania, Boll. Ist. Zool. Univ. Torino 3 1952 : p. 26 figs., ARCANGELI 32 ; *A. (Alpioniscus) boldorii macedonicus* subsp. nov. p. 233, *Alpioniscus* (*A.*) *karamani* sp. nov. p. 237, Macedonia. Acta Mus. maced. Sci. nat. 1 11 1954 : figs., BUTUROVIC 150.

*Armadillidium*, discussion, classification, key to spp., figs., SCHMÖLZER 706 ; transpiration, BURSELL 147 ; *A. (Armadillidium) cf. carniolense*, figd., STROUHAL 762 ; *A. mateui*, sp. nov. Spain. Arch. Inst. Aclim. 1 1953 : p. 63, figs., VANDEL 807 ; *A. racovitzai* sp. nov. p. 56, *A. vulgare*, *A. mateui*, *A. pruvoti*, figd., Alpes, France. Notes Biospéologiques, IX 1954 : VANDEL 814 ; *A. spinosum* sp. nov. Spain. Zool. Anz. 154 1955 : 32, figs., SCHMÖLZER 707 ; *A. (Armadillidium) valonae* sp. nov. Albania. Boll. Ist. Zool. Univ. Torino 3 1952 : p. 6, figs., ARCANGELI 32 ; *A. vulgare*, genetics, HOWARD 390.

*Armadillo (Atlandillo) ausseli*, figd.,  
VANDEL 812; *A. troglophilus* sp. nov.  
p. 168, Arabia (no figs.). Mem. Mus.  
nat. Hist. Paris V. 1954: COIFFAIT  
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*Bathytropa colasi* sp. nov. Spain.  
Bull. Mus. Hist. nat. Paris (2) 1 1954:  
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*Berytoniscinae* sub. fam. nov.  
(Oniscidae) for *Berytoniscus* gen. nov.  
*B. singularis* sp. nov. p. 168 (no figs.)  
Arabia. Mem. Mus. nat. Hist. Paris  
V. 1954: COIFFAIT & CASSAGNAU &  
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*Caucasonethes rothi* sp. nov. Oregon.  
Pacific sci. 7 2 1953: 175, figs., VANDEL  
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*Chaetophiloscia pseudocellaris* coiffaiti  
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1954: COIFFAIT & CASSAGNAU &  
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Biospéologiques IX 1954: VANDEL  
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*Cubaris mirandai* sp. nov. Mexico.  
An. Inst. Biol. Univ. Méx. 25 1954:  
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*Clysticus convexus*, *C. opacus*, *C. iners*,  
*C. kossugi*, p. 359, *C. lobulatus*, p. 364,  
spp. nov. Turkey, key to spp., Rev.  
Fac. Sci. Univ. Istanbul. 18b 3-4  
1953: STROHAL 760.

*Diploexochus jeanneli* sp. nov. p. 332  
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14 2 FÉLICE, P. de 259.

Eubelidae, characteristics, discussion,  
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*Haloporcellio pyrenaicus* sp. nov.  
France. Zool. Anz. 154 1955: 32, figs.,  
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*Haplophthalmus danicus*, figs., VANDEL  
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nat. Hist. Paris V. 1954: COIFFAIT  
& CASSAGNAU & VANDEL 182.

*Hemilepistus (Desertellio) pavlovokii*  
spec. nov. Kazakhstan, village Konum-Ulen,  
near Drharkent. Zool. Zh. 3 32 1954:  
p. 477, BORUTSKII 106; *H. (Desertellio)*  
*russanova* sp. nov. p. 164, figs., Azerbaijan, *H. (H.) Klugei*

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7 1951: BORUTSKY 101.

*Hiallelgon* gen. nov. p. 339, *H.*  
*jeanneli* sp. nov. p. 340, figs., 1945  
Mem. Mus. Hist. nat. Paris 19 2:  
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*Hiallum richardsoni* sp. nov. p. 338,  
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Paris 19 2: FÉLICE P. DE 259.

*Libanonethes* gen. nov. for *L. probosciferus*  
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Mem. Mus. nat. Hist. Paris V. 1954:  
COIFFAIT & CASSAGNAU & VANDEL  
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*Ligia* Fabricius, validation of generic name,  
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*Ligidium margantae* spec. nov. Zaalk-  
isk Alatan near the town Alma-Ata.  
Bull. Soc. Nat. Moscow Biol. 60 1  
1955: 59, BORUTSKY 102.

*Ligyda*, synonymy discussed, ARCANGELI 31.

*Macedoniscus* gen. nov. p. 240, *M.*  
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Acta Mus. maced. Sci. nat. 1 11 1954:  
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*Mesarmadillo giganteus* p. 334, figs.,  
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1945 Mem. Mus. Hist. nat. Paris 19 2:  
FÉLICE P. DE 259.

*Metoponorthus sexfasciatus lucasioides*  
sub. sp. nov. *M. s. hispanus*, *M. fus-  
comarmoratus*, Spain. Arch. Inst. Aclim.  
1 1953: p. 52, figs., VANDEL 807; *M.*  
*(Polytretus) stricticuada stricticauda*,  
*M. (Polytretus) stricticuada orientalis* sub.  
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Zool. 8 1 1954: VANDEL 812.

*Nesiotoniscus corsicus racovitzai* sub.  
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*N. corsicus bernardi*, *N. corsicus ribensis*,  
*N. corsicus corsicus*, *N. delamarei*, all  
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IX 1954: VANDEL 817; *N. delamarei*  
sp. nov. N. African Coast, Geograph.  
distr. discussed. Vie et Milieu 4 4  
1953: p. 664 figs., VANDEL 820.

*Oniscus*, transpiration, BURSELL 147;  
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*Parcystisticus pugionifer pugionifer*, figs., *P. pugionifer kopdagensis sub. sp. nov.* p. 371, key to spp., Turkey. Rev. Fac. Sci. Univ. Istanbul 18B 3-4: STROUHAL 760.

*Phalloniscus pygmaeus*, discussion, figs., VANDEL 811.

*Phymatoniscus tuberculatus*, *P. tuberculatus tolosanus*, *P. tuberculatus tuberculatus*, *P. tuberculatus arbassanus*, *P. tuberculatus gironensis*, figd., VANDEL 813.

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*Porcellidium sarsi*, *P. lecanoides*, *P. fimbriatum*, population dynamics, biometrics, speciation, figs., BATTAGLIA 70; *P. sarsi*, *P. fimbriatum*, biometrics, BATTAGLIA 69.

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*Proporcellio quadriseriatus troglophilus sub. sp. nov.* p. 168, Arabia (no figs.). Mem. Mus. nat. Hist. Paris V. 1954: COIFFAIT & CASSAGNAU & VANDEL 182.

*Protracheoniscus*, discussion, etc., ARCANGELI 34; *P. (Mongoloniiscus) albanicus sp. nov.*, Albania. Boll. Ist. Zool. Univ. Torina 3 1952: p. 17 figs., ARCANGELI 32; *†P. (Protracheoniscus) cf. amoenus* figd., STROUHAL 762.

*Spelaeoniscus kabylicola*, figs., VANDEL 813.

*Stenoriscus aiasensis sp. nov.* Atlantic Islands. Bull. Soc. zool. Fr. 78 1954: 389, figs., LEGRAND 482.

*Sympastus brevicornis*, coxal articulation of peracopods, figs., GRUNER 314.

*Tendosphaera verrucosa*, figs., VANDEL 813.

*Trichoniscoides drescoi sp. nov.* p. 67, figs., Spain. Notes Biospéologiques IX 1954: VANDEL 816.

*Trichoniscus (Trichoniscus) omblae*, figs., ARCANGELI 32; *T. coiffaiti sp. nov.* p. 168, Arabia (no figs.), Mem. Mus. nat. Hist. Paris V. 1954: COIFFAIT & CASSAGNAU & VANDEL 182; *T. (Trichoniscus) pusillus noricus*, *T. (Trichoniscus) muscivagus*, *T. (Trichoniscus) nivatus*, *T. (Chalconiscus) ostarrichi*, *T. (Chalconiscus) steinböckii*, *T. (Tachyoniscus) austriacus*, all figd., STROUHAL 763; *T. semigranulatus sp. nov.* p. 243, Macedonia. Acta Mus. maced Sci. nat. 1 11 1954: figs., BUTUROVIĆ 150.

*Tylos*, discussion, etc., ARCANGELI 35; *T. granulatus*, coxal articulation of peraeopods, figs., GRUNER 314; *T. latreillii*, orientation reactions, figs., PARDI 608.

*Venezillo canariensis* figd., VANDEL 812; *V. llamasii sp. nov.* p. 284, *V. cacahuamilpensis*, *V. pleogonioforus* figd., Mexico. Ac. Inst. Biol. Univ. Méx. 25 1954: figs., RIOJA 670; *V. trifolium*, figs., VANDEL 808.

#### EPICARIDEA

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Parasit. 39 6, PEARSE 616; *B. virbii*, cabiropsid hyperparasite described and figured, ROMANO 675.

*Entionessa okayamaensis* sp. nov. p. 239, Japan, figs., Rep. Fac. Fish. Prefec. Univ. Mie 1, No. 3 1954: SHIINO 724.

*Epipenaeon oralis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 20 (no fig.), PILLAI 632.

*Paracepon nierstraszii* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 20 (no fig.), PILLAI 632.

*Prodajus lobiancoi*, morphology, figs., TABERLY 767.

*Stegoalpheon choprai* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 20 (no fig.), PILLAI 632.

### TANAIDACEA

Tanaids of Travancore, PILLAI 632; Channel Islands, LE SUEUR 492.

*Apseudes cooperi* sp. nov. p. 939, figs., S. African waters, Ann. Mag. Nat. Hist. (12) 1954: BROWN 140.

*Heterotanais oerstedi*, detailed anatomy, figs., SIEWING 736.

*Kalliapeudes omer-cooperi* sp. nov. Suez. Ann. Mag. nat. Hist. (12) 7 1954: 562, figs., LARWOOD 475.

*Leptochelia erythraea*, figs., LARWOOD 475.

*Synapseudes comorinensis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 3 (no fig.), PILLAI 632.

*Tanais estuaricus* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 2 (no fig.), PILLAI 632; T. (*Anatanais*) sp., figs., LARWOOD 475.

*Tanais lilljeborgi*, detailed anatomy, figs., SIEWING 736.

*Xenanthuria linearis* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 3c 1 1954: p. 5 (no fig.), PILLAI 632.

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*Bodotria choprai* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 2c 1 1951: p. 82, figs., KURIEN 468.

*Cyclaspis quadruplicata* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 2c 1 1951: p. 90, figs., KURIEN 468.

*Eocuma travancoricum* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 2c 1 1951: p. 97, figs., KURIEN 468.

*Gigacuma* gen. nov. for *G. halei* sp. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 2c 1 1951: p. 102, figs., KURIEN 468.

*Hemilamprops lata* p. 179, *H. diversa* p. 183, spp. nov. N.S. Wales, Trans. roy. Soc. S. Austr. 70 1 1946: figs., HALE 322.

*Iphinoe brevidactyla* p. 45, *I. truncata* p. 48, spp. nov. South African waters, Trans. roy. Soc. S. Austr. 76 1953: figs., HALE 323.

*Paradiastylis culicoides triplicata* var. nov. Travancore, Bull. centr. res. Inst. Univ. Travancore 2c 1 1951: p. 108, figs., KURIEN 468.

### mysidacea

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*Acanthomysis alaskensis* p. 131, *A. borealis* p. 135, spp. nov. N. Pacific Seas, Pacif. Sci. 8 2 1954: figs., BANNER 53.

*Diamysis bahirensis mecznikowi*, *D. pengoi*, figs., key to spp., BĂCESCU 43.

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*Mesopodopsis slabberi*, figs., BĂCESCU 43; *M. zeylanica* sp. nov. Ceylon. Zool. Meded. 33 1954: 33, figs., NOUVEL 594.

*Mysis flexuosa*, polarised micro-analysis of antennae, photos., SCHMIDT 704; *M. stenolepis*, *M. mixta*, *M. gaspensis* sp. nov. St. Lawrence Estuary. Canad. Fld. Nat. 68 4 1954: 146, figs., TATTERSALL 760.

*Neomysis awatschensis*, fig., BANNER 53.

*Paramysis (Paramysis) helleri* p. 2, figs., *P. (P.) nouveli* sp. nov. p. 4 Roscoff, figs., *P. (P.) bacescoi* sp. nov. p. 8 Roscoff, figs., *P. (P.) arenosa*, *P. (P.) portzicensis*, key to spp. p. 14, 1953 Bull. Inst. oceanogr. Monaco No. 1934, LABAT 470; *P. nouveli*, copulation and oviposition, figs., LABAT 471; *P. (Pseudoparamysis) pontica*, *P. (Metamysis) ullskyi*, *P. (Paramysis) intermedia*, *P. kosswigi*, *P. lacustris tanaitica*, *P. lacustris kowalewskyi*, *P. lacustris turcica*, *P. kröyeri*, *P. proconnessa*, *P. helleri*, *P. agigensis*, *P. baeri*, *P. baeri bispinosa*, *P. kessleri sarsi*, all figd., keys, etc., BĂCESCU 43.

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*Parabathynella*, revision of genus, DELAMARE DEBOUTTEVILLE & CHAPPUIS 213; *P. pavliani* sp. nov., prelim. diagnosis, no figs., Madagascar. Vie et Milieu 4 4 1953: p. 748, DELAMARE-DEBOUTTEVILLE 209; *P. phreatica*, *P. fagei*, *P. lusitanica*, *P. malayi*, figd., describ., DELAMARE DEBOUTTEVILLE & CHAPPUIS 213; *P. phreatica*, figd., KARAMAN 425;

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*Oxynaspis floridana* sp. nov. Florida. Proc. Acad. nat. Sci. Philad. 105 1953 : p. 15, fig., PILSBRY 636.

*Paralepas minuta americana* subsp. nov. Florida. Proc. Acad. nat. Sci. Philad. 105 1953 : p. 16, figs., PILSBRY 636.

*Scalpellum gibbum*, *S. arietinum*, *S. diceratum*, figs., PILSBRY 636; *S. longicarinatum*, *S. striolatum*, *S. albatrossianum*, *S. talismani*, figs., *S. phrygianum* sp. nov. Greenland waters 1000–1500 m. p. 8, figs., Dan. Ingolf. Exped. 3 1953 : BROCH 137.

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1951 : MASHIKO 532.

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*Amnardia pentasetosa* sp. nov. Coast of Chile, Kieler Meeresf. 10 1954 : p. 250, figs., NOODT 591.

*Arcticocamptus kivchini* sp. nov. Kamchatka, Sborn. Arch. Mus. zool. Univ. Moscow 7 1951 : p. 157, figs., BORUTSKY 103.

*Arenopontia acantha* sp. nov. sand-dwelling, Mediterranean, Vie et Milieu 4 1953 : p. 268, figs., CHAPPUIS 172 ; *A. subterranea*, figs., CHAPPUIS 174.

*Arenosetella germanica*, fig., KUNZ 466 ; *A. incerta* p. 256, *A. pectinata* p. 258, spp. nov. sand-dwelling, Mediterranean. Vie et Milieu 4 1953 - CHAPPUIS 172 ; *A. mediterranea* sp. nov. Sand on the beach at Roussillon. Arch. Zool. exp. gén. 91 1953 : p. 37, figs., CHAPPUIS 174.

*Attheyella* (*A.*) *gladkovi* sp. nov. Central Asia, Zool. Zhurn. Moscow 17 1938 : p. 184, figs., BORUTSKY 100.

*Brehmiella trispinosa*, figs., PESTA 626.

*Bryocamptus (Rheocamptus) brevipes* sp. nov. L. Baikal, Doklady A.N. USSR. p. 1595, figs., BORUTSKY 104.

*Canthocamptus microstaphylinus*, fig., WESENBERG LUND 838 ; *C. staphylinus*, figs., HEMSEN 352 ; PESTA 626 ; resting stage described, FRYER & SMYLY 284.

*Chappuisiella australica*, figs., BREHM 125.

*Cletocamptus albuquerquensis*, figs., BREHM 134.

*Clytemnesta rostrata*, figs., BRODSKY 138.

*Corissa*, compar. with *Vettoria*, etc., no figs., ROSE & VASSIERE 680.

*Delachauxiella salvatoris* p. 51, *D. incerta* p. 53, spp. nov. Tasmania, Pap. Roy. Soc. Tasm. 87 1953 : figs., BREHM 125.

*Delamarella arenicola* gen. et sp. nov. Beach at Roussillon. Vie et Milieu 4

1 1954 : p. 111, figs., CHAPPUIS 171 ; Sand at Roussillon, Arch. Zool. exp. gen. 91 195 p. 44, figs., CHAPPUIS 174.

*Diarthrodes secunda* sp. nov. Baltic coast of Germany, Kieler Meeresf. 11 1954 : p. 226, figs., KUNZ 466.

*Diarthrodes cystoeucus* sp. nov. parasitic in red alga, California. J. Wash. Acad. Sci. 44 1954 : p. 326, figs., FAHRENBACH 254.

*Discoharpacticus* gen. nov. p. 247. Type species, *D. mirabilis* sp. nov. p. 248, figs., Coast of Chile, Fam. Harpacticidae, Kieler Meeresf. 10 1954 : NOODT 591.

*Ectinosoma abrau*, figs., HEMSEN 352.

*Elaphoidella elaphoides*, figd., ŠTĚRBA 756 ; *E. ruffoi* sp. nov. p. 5, figs., *E. pseudophreatica*, figs., Subterranean, N. Italy. Mem. Mus. civ. Stor. nat. Verona 4 1954 : CHAPPUIS 169.

*Epischura massachusettsensis*, figs., HUMES 392.

*Harpacticus chelifer*, frontal organs, DAHL 195.

*Heterlaophonte uncinata*, figs., PETROVSKI 628.

*Leptastacus aberrans* sp. nov. Sand-dwelling, Mediterranean. Vie et Milieu 4 1953 : p. 270, figs., CHAPPUIS 172 ; *L. minutus* sp. nov. Sand at Roussillon. Arch. Zool. exp. gén. 91 195 : p. 41, figs., CHAPPUIS 174.

*Leptopsyllus arenicola*, Sand-dwelling, Mediterranean. Vie et Milieu 4 1953 : p. 262, figs., CHAPPUIS 172.

*Limnocletodes behningi*, figs., HEMSEN 352.

*Loureirophonte* gen. nov. p. 48, *L. catarinensis* p. 48, figs., the type species and *L. paranaensis* p. 52 spp. nov., both figd., Coast of Brasil, Dusenia 4 1953 : JAKOBI 406.

*Mesochra heldti*, figs., MARGALEF 521 ; *M. sp. cf. heldti*, fig., MARGALEF 522.

*Microsetella norvegica*, *M. rosea*, figs., BRODSKY 138.

*Moraria poppei*, figs., MARGALEF 521.

*Mourephonte catharinensis* gen. et sp. nov. p. 56, figs. p. 53, Coast of Brazil, Dusenia 4, 1953 : JAKOBI 303.

*Nannopus* sp., new but not named, figs., Austrian Alps, HEMSEN 352.

*Nitocra cari* sp. nov. p. 106, *N. typica* f. *adriatica* p. 109, f. nov. *N. affinis* f. *rijekana* f. nov. p. 111, all figd., Subterranean coastal waters, Macedonia. Acta Mus. maced. Acad. Sci. nat. 2 1954 : PETROVSKI 628 ; *N. hibernica*, figs., NOODT 592.

*Nitrocrella kosswigi* sp. nov. Turkey, Publ. hidrobiol. res. Inst. Univ. Istanbul. 2B 1954 : p. 32, figs., NOODT 592 ; *N. psammophila* sp. nov., Subterranean Italy. Mem. Mus. civ. Stor. nat. Verona 4 1954 : p. 160, figs., CHAPPUIS 170.

*Onychocamptus kliei* f. *adriatica* f. nov. p. 114, figs., Acta Mus. maced. Sci. nat. 2 1954 : PETROVSKI 628.

*Paulianacaris delamarei* sp. nov. Sand-dwelling, Mediterranean. Vie et Milieu 4 1953 : p. 270, figs., CHAPPUIS 172.

*Paracamptus schmeili* subterraneus form nov. Czechoslovakia, Čas. moravsk. Mus. 39 1954 : 166, figs., ŠTĚRBA 756.

*Paraleptastacus spinicauda triseta* subsp. nov. Turkey. Publ. Inst. Hydrol. Univ. Istanbul 2B 1954 : p. 35, figs., NOODT 592.

*Paramenophia* gen. nov. p. 597, type species, *P. chilensis* sp. nov. p. 600, figs., Chile. *Dactylophusia platysoma* Thompson & Scott also placed in this genus. Ark. zool. 6 1954 : LANG 473.

*Paramesochra coelebs*, figs., Božić 117 ; *P. constricta*, figs., CHAPPUIS 172.

*Paraphyllodopodopsyllus longipalpus* sp. nov. Sand-dwelling, Mediterranean. Vie et Milieu 4 1953 : p. 263, figs., CHAPPUIS 172.

*Pararenosetella meridionalis* sp. nov. Sand at Roussillon, Arch. Zool. exp. gén. 91 195 : p. 38, figs., CHAPPUIS 174.

*Parastenocaris italicica* sp. nov. Subterranean, Italy. Mem. Mus. civ. Stor. nat. Verona 4 p. 11, figs., CHAPPUIS 169 ; *P. italicica*, figs., *P. ruffoi* sp. nov. p. 159, figs., Subterranean, Italy, Mem. Mus. civ. Stor. nat. Verona 4 1954 : CHAPPUIS 170 ; *P. kabyla* sp. nov. Sand-dwelling Mediterranean, Vie et Milieu 4 1953 : p. 270, figs., CHAPPUIS 172 ; *P. phyllophora* sp. nov. Turkey. Publ. Inst. Hydrol. Univ. Istanbul 2B 1954 : p. 37, figs., NOODT 592.

*Parategastes herteli* sp. nov. p. 174, figs., Brazil coast. *P. sphericus punicus*, figs., Dusenia 4 1953 : JAKOBI 407.

*Proameria hiddensoensis*, fig., KUNZ 466.

*Psammotopa vulgaris*, figs., CHAPPUIS 174.

*Psammastacus confluens*, figs., CHAPPUIS 172.

*Rhizothrix (Adelopoda) bocqueti* sp. nov. Sand at Roscoff. Arch. Zool. exp. gén. 91 Notes et Rev. 1953 : p. 17, figs., Božić 117.

*Schizopera akatovae* spec. nov. Caspian sea. Zool. Zh. 32 5 1953 : p. 878, BORUTZKI 105 ; *S. brusinae*, p. 94, *S. langi* p. 97, spp. nov., *S. ornata* f. meridionalis f. nov. p. 99, *S. chaelosa* p. 100, sp. nov., all figd., Yugoslavia, coastal ground water. Acta Mus. maced. Sci. nat. 2 1954 : PETROVSKI 628 ; *S. neglecta*, figs., HEMSEN 352.

*Tisbe celata* sp. nov. from mantle cavity of edible mussel, J. Fish. Res. Bd. Can. 11 1954 : p. 817, figs., HUMES 393 ; *T. gracilis* from Chile, figs., NOODT 591 ; *T. longicornis* ? figs., MARGALEF 522.

*Thalestris rhodymeniae*, life history in excavation in seaweed fronds, Nauplii, figs., HARDING 328.

*Vettoria*, compar. with *Corissa*, etc., no figs., ROSE & VAISSIÈRE 680.

*Viguirella coeca*, figd., ŠTĚRBA 756.

*Zausodes cinctus* sp. nov. Madras coast. Zool. Anz. 152 1954 : p. 89, figs., KRISHNASWAMY 454.

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*Acanthocyclops robustus vernalis*, figs., LINDBERG 499 ; *A. robustus vernalis*, *A. robustus americanus*, *A. bicuspis*, *A. odessana*, figs., ŠRÁMEK-HUŠEK 749 ; *A. vernalis*, figs., PESTA 624 ; *A. vernalis*, ff. "vernalis", "robusta", "setiger", figs., PETROVSKI 627 ; *Acanthocyclops*, sp., figs., HEMSEN 352.

*Allocyclopina madagassica* gen. et sp. nov. Madagascar. Near *Pseudocyclopoides*. Zool. Anz. 153 1954 : p. 308, figs. 1-6, KIEFER 433.

*Bomolochus leptoscari* p. 222, figs., *B. (Artacolax) cypseluri* p. 224, figs., spp. nov. gills of fishes, Japan. Publ. Seto

mar. biol. Sta. 3 1953 : YAMAGUTI 856 ; *B. solae*, figs., DOLLFUS 230.

*Bryocyclops*, key to spp., *B. pauliana* sp. nov. In cave, Madagascar, Hydrobiologia 6 1954 : p. 97, figs., 1, a-k, LINDBERG 502.

*Corycaeus* sp., figs., BRODSKY 138.

*Cyclops leuckarti*, *C. bicolor*, resting stages, fig., FRYER & SMYLY 284 ; *C. (Microcyclops) bicolor*, figs., PESTA 626 ; *C. (Diacyclops) bicuspidatus*, *C. (Macrocylops) fuscus*, *C. (Mesocyclops) hyalinus*, *C. (Mesocyclops) leuckarti typicus*, *C. (Eucyclops) serrulatus*, *C. (E.) speratus*, *C. (C.) strenuus*, *C. (Microcyclops) varicans*, *C. (Acanthocyclops) vernalis*, *C. Megacyclops viridis*, figs., PESTA 626 ; *C. (Diacyclops) crassicaudis* var. *cosana* var. nov. Subterranean, Italy. Arch. zool. ital. Napoli 38 1954 : p. 463, figs., STELLA & SALVADORI 752 ; *C. insignis*, *C. strenuus strenuus*, *C. vicinus vicinus*, *C. vicinus kikuchii*, figs., ŠRÁMEK-HUŠEK 749 ; *C. strenuus abyssorum*, *Cyclops (Acanthocyclops) vernalis americanus*, figs., FRYER 283 ; *C. strenuus*, Cytology, spindle structure, STICH 757 ; *C. strenuus*, *C. insignis*, *C. albidus*, *C. oithonoides*, *C. leuckartii*, *C. serrulatus*, *C. macrurus*, *C. fuscus*, *C. bicuspidatus*, *C. viridis*, *C. fimbriatus*, figs., WESENBERG-LUND 838 ; *C. vicinus*, figs., MASHIKO 532.

*Diacyclops tantalus* f. *slovenica* f. nov. p. 17, *D. stygius macedonicus* subsp. nov. p. 18, Jugoslavia, both figd. Acta Mus. maced. Sci. nat. 2 1954 : PETROVSKI 627.

*Ergasilus*, key to Indian species, *E. batei* sp. nov. parasitic on gills of *Labeo bata*, from India, Rec. Ind. Mus. 50 1953 : p. 287, figs., KARAMCHAU-DANI 426 ; *E. borneensis* sp. nov. Borneo, Publ. Seto. mar. biol. Lab. 3 1954 : p. 375, figs., YAMAGUTI 857 ; *E. briani*, *E. sieboldi*, figs., KORYAKOV 456 ; *E. fidiformis* sp. nov. Gills of fishes, Japan. Publ. Seto. mar. biol. Sta. 3 1953 : p. 221, figs., YAMAGUTI 856 ; *E. gasterostei*, fig., WESENBERG-LUND 838 ; *E. squaliobarbi*, parasite on *Squaliobarbus*, p. 278, figs., *E. amplexens* p. 279, figs., parasitic on *Mugil cephalus*, spp. nov. R. Amur, *E. tumidus*, *E. scalaris*, *E. anchoratus*, *E. peregrinus*, figs., Sci. Adv. Univ. Leningrad No. 141 1952 : DOGIEL & AKHMAROV 229.

*Eucyclops nichollsi* p. 58, figs. 57-64, *E. miser* p. 60, figs. 65-67, spp. nov., *E. speratus* var. *tasmanica* var. nov. p. 60. Pap. Roy. Soc. Tasm. 87 1953 : BREHM 125 ; *E. serrulatus*, figs., HEMSEN 352 ; *E.*, fig., MASHIKO 532 ; *E. serrulatus* var. *speratus*, *E. macrurus*, figs., ŠRÁMEK-HUŠEK 749 ; *E. silvestrii*, *E. ensifer*, figs., LINDBERG 501.

*Halicyclops oblongus* p. 158, figs., *H. robustus* p. 161, figs., spp. nov. Caspian Sea, *H. setifer*, fig. Nytt Mag. Naturv. 88 1951 : LINDBERG 495 ; *H. pusillus* sp. nov. Madagascar, Zool. Anz. 153 1954 : p. 311, figs., KIEFER 433 ; *H. sarsi*, figs., HEMSEN 352 ; *H. venezuelensis* sp. nov. Miranda, Venezuela, Ark. zool. 7 1954 : p. 197, figs., LINDBERG 501.

*Lichomolgides cuanensis* gen. et sp. nov. parasitic in ascidian *Trididemnum tenerum* from Strangford Loch, Parasitology 44 1954 : p. 379, figs., GOTTO 309.

*Lichomolgus tenuifurcatus*, in Strangford Lough, Ireland, GOTTO 308.

*Macrocylops fuscus*, figs., MASHIKO 532.

*Megacyclops viridis*, figs., HEMSEN 352.

*Menzeliella* gen. nov. p. 105, for *Cyclops stahali* Chappuis. Hydrobiologia 6 1954 : LINDBERG 502.

*Mesocyclops leuckarti*, figs., MASHIKO 532 ; *M. longisetus*, figs., LINDBERG 466.

*Metacylopina roscoffensis* sp. nov. dredged from sand at Roscoff. Bull. Soc. zool. Fr. 78 1954 : p. 403, figs., BOŽIĆ 118.

*Microcyclops karvei*, fig., HEMSEN 352 ; *M. varicans rubellus*, figs., MARGALEF 522.

*Mytilicola intestinalis*, biology and dispersal, figs., BOLSTER 96 ; on German mussel-beds, MEYER-WAARDEN & MANN 557 ; in Italian mussel-beds, MEYER-WAARDEN & MANN 558 ; on East Coast of England, WAUGH 831.

*Oridacyclops arndti* f. *prespensis* f. nov. Jugoslavia p. 5, figs., *O. arndti*, fig., Acta Mus. maced. Sci. nat. 2 1954 : PETROVSKI 627.

*Oithona amazonica continentalis* subsp. nov. Rio Negro. Ark. zool. 7 1954 : p. 195, figs., LINDBERG 501 ; *O. similis*, *O. brevicornis*, *O. plumifera*, *O. nana*, figs., BRODSKY 138 ; *O. similis*, life history off Greenland, DIGBY 227.

*Oncaeae conifera*, *O. borealis*, figs., BRODSKY 138.

*Paracyclops fimbriatus*, fig., HEMSEN 352 ; *P. cf. fimbriatus*, figs., LINDBERG 501.

*Pseudergasilus parasiluri*, *P. major*, *P. undulatus*, figs., DOGIEL & AKHMAROV 229.

*Saphirella* sp., figs., BRODSKY 138.

*Specycyclops*, key to spp., *S. hellenicus* sp. nov. Greece, Prakt. Hellen. hydrobiol. Inst. 6 2 1952 : p. 25, figs., LINDBERG 496 ; *S. infernus*, figs., KIEFER 431 ; *S. minutissimus*, figs., PETROVSKI 627.

*Taeniacanthus upenei* p. 377, figs. sp. nov. Gill of *Upenus* sp., Celebes, *T. u. upeneoides* subsp. nov. p. 378, figs., Gill of *Upeneoides bensasi* Celebes, Publ. Seto. mar. biol. Lab. 3 1954 : YAMAGUTI 857.

*Teredopholus renicola* gen. et sp. nov. parasitic on *Teredo petiti* in French West Africa, Bull. Inst. franç. afr. noire 16A 1954 : p. 849, figs., RANCUREL 654.

*Thermocyclops hyalinus*, *T. taiokhensis*, figs., MASHIKO 532 ; *T. incisus speluncus* subsp. nov. Madagascar. Mém. Inst. Sci. Madagascar 8A 1953 : LINDBERG 498 ; *T. schuurmanae*, fig., LINDBERG 497 ; *T. stephaniadesi*, figs., LINDBERG 496.

*Tochochères cylindraceus* Commensal on *Loripes lacteus*, description, figs., STOCK 758.

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Trematode metacercaria in *Lernaceocera lusci*, DOLLFUS 231.

*Ameristocheres inermis* gen. et sp. nov. Parasitic on *Doridium membranaceum* from Naples. Ann. Soc. roy. zool. Belg. 59 1929 : p. 41, figs., PELSENEER 618.

*Anthosoma crassum* description, figs., FONTES 271.

*Anuretes branchialis* sp. nov. parasitic on *Thynnus pelamis* from coast of Bom-

bay. J. zool. Soc. India 5 1953 : p. 239, figs., RANGNEKAR 656.

*Caligus*, key to species parasitic on cod, *C. curtus*, *C. rapax*, figs., DOLLFUS 230 ; *C. brevis* sp. nov. parasitic on various fishes of Labridae from Japan. Bull. jap. Soc. Sci. Fish. 20 1954 : p. 178, figs., SHIINO 730 ; *C. dieuzeidei*, found in Japanese waters, figs., SHIINO 731 ; *C. fulvipurpureus* sp. nov. parasitic on Mackerel-pike from Japan, Annot. Zool. jap. 27 1954 : p. 150, figs., SHIINO 727 ; *C. glaudifer* sp. nov. parasitic on *Zenopsis nebulosa* from Japan, Annot. Zool. jap. 27 1954 : p. 154, figs., SHIINO 728 ; *C. grandiabdominalis* p. 381, figs., Gill of *Caesio kuning*, Celebes, *C. paxillifer* p. 383, figs., Gill of *Chorinemus moadetta*, Celebes, *C. annularis* p. 385, figs., Gill of *Otolithes* and *Caranx* spp. Celebes, spp. nov. *C. alalongae* figs., Publ. Seto. mar. Lab. 3 1954 : YAMAGUTI 857 ; *C. katuwo*, figs. of both series, SHIINO 729 ; *C. lacustris*, figs., KAJ 418 ; WESENBERG-LUND 838 ; *C. russellii* sp. nov. on Scorpion fish *Pterois russellii* from Trivandrum coast. Comparison with *C. rufimaculatus* and *C. pageti*. Nauplius and chalimus stages, figs., Bull. centr. res. Inst. Univ. Travancore 1c 1950 : p. 1, KURIEN 469 ; *C. triangularis* sp. nov. parasitic on *Halichoeres poecilopterus* Japan. Annot. zool. jap. 27 1954 : p. 146, figs., SHIINO 726.

*Dinematura latifolia*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 217 ; *D. producta*, figs., LÜLING 511.

*Elytrophora brachyptera*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 217.

*Eucyclops lilljeborgi* in Denmark, *E. macrurus*, *E. speratus*, *E. serrulatus*, *E. macruroides*, *E. lilljeborgi*, figs., RØEN 674.

*Hatschekia diodontis*, p. 225, *H. mahaensis* p. 226, *H. pseudolabri* p. 227, *H. ostraci* p. 228, spp. nov. Gills of fishes, Japan, fill figd., Publ. Seto. mar. biol. Sta. 3 1953 : YAMAGUTI 856 ; *H. teathidis* p. 392, figs., Gill of *Teuthis* sp. *H. synagris* p. 393, figs., Gill of *Synagris taenopterus*, *H. longigenitalis* p. 394, figs., Gill of *Synagris taeniopterus*, *H. gracilis* p. 395, Gill of *Lethrinus* sp. spp. nov. Celebes, Publ. Seto. mar. biol. Lab. 3 1954 : YAMAGUTI 857.

*Kroyeria carchariae-glauci*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 217.

*Lepeophtheirus salmonis*, fig., USSING 803.

*Leptinogaster pholadis* gen. et sp. nov. Parasitic on *Pholas dactylus* from Naples. Ann. Soc. roy. zool. Belg. 59 1929 : p. 37, fig., PELSENEER 618.

*Lernaeocera branchialis*, figs., DOLLFUS 230 ; *L. branchialis*, *L. lusci*, gut movements, STEKHOVEN & MONTAGUE 751 ; *L. lusci*, with trematode metacercaria, DOLLFUS 231.

*Lernanthropus cadenati* p. 145, figs., parasitic on *Elops senegalensis*, *L. villiersi* p. 147, figs., parasitic on *Pristipoma* spp., *L. eddiwarrneri* p. 151, figs., parasitic on *Chromis lineatus* and *Lutjanus fulgens*, *L. grassei* p. 152, figs., parasitic on *Otolithus brachygnathus*, *L. monodi* p. 155, figs., parasitic on *Lutjanus agenes* spp. nov. W. African Coast, *L. trachura*, *L. wilsoni*, *L. theodori*, figs., Bull. Inst. fran<sup>c</sup>. Afr. Noire 16A 1953 : DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 216 ; *L. corniger* p. 387, figs., *L. latiss* p. 389, *L. caesonia* p. 391, spp. nov. Celebes, Gills of fishes, all figd., Publ. Seto. mar. biol. Lab. 3 1954 : YAMAGUTI 857 ; *L. trachura*, *L. wilsoni*, figs., *L. cadenata* sp. nov. p. 145, figs., parasitic on gills of *Elops senegalensis* W. African Coast. Bull. Inst. fran<sup>c</sup>. Afr. Noire 11A 1953 : DELAMARE DEBOUTTEVILLE & NUNES-RUIVO 216 ; *L. trachuri*, figs., NUNES-RUIVO 598.

*Lerneanenius nemiptera* p. 15, figs., parasitic on *Nemipteris marginatus* from Madras, *L. stromatei* p. 16, figs., parasitic on *Stromateus niger* from Madras, spp. nov. *L. hemirhamphi*, figs., J. Parasit. 39 1953 : GNANAMUTHU 300.

*Nemesis robusta*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 217.

*Pandarus bicolor*, fig., LÜLING 511.

*Pennella exocoeti*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 216 ; *P. filosa*, *P. crassicornis*, figs., DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 217 ; *P. germania fagei* subsp. nov., parasitic on *Germo alalunga*. Ann. Sci. nat. (Zool.) (11) 15 1954 : p. 397, figs., POISSON & RAZET 640 ; *P. varians*, development, biology, figs., ROSE & HAMON 679.

*Peroderma cylindricum* on Sardines off Dakar, CADENAT 152 ; figs., NUNES-RUIVO 598.

*Sagum postelli* sp. nov. parasitic on *Epinephelus aeneus* from W. Africa, Bull. Inst. franc. Afr. Noire 16a 1953 : DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 216.

*Strongylopleura histris* gen. et sp. nov. Parasitic on *Syndosmya alba* from Boulogne, Ann. Soc. roy. zool. Belg. 59 1929 : p. 37, figs., PELSENEER 618.

*Toccoheres cylindraceus* sp. nov. Parasitic on *Lucina lactea* at Roscoff, Ann. Soc. roy. zool. Belg. 59 1929 : p. 37, fig., PELSENEER 618.

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*Achtheres percarum*, fig., Ussing 803.

*Basanistes huchonis*, figs., ŠENK 715 ; *B. woskoboinikovi*, figs., KORYAKOV 456.

*Brachiella minuta*, figs., NUNES-RUIVO 598.

*Chomiosphaera indica* sp. nov. on *Neptuna* sp. from Madras. Parasitology 44 1954 : p. 371, figs., GNANAMUTHU 301.

*Clavella adunca*, *C. brevicollis*, figs., DOLLFUS 230 ; *C. alata*, *C. strumosa*, figs., *C. delamarei* sp. nov. p. 135, figs., from pectoral fin of *Cepros aper* Coast of Algeria. Vie et Milieu Suppl. No. 3 1954 : NUNES-RUIVO 598.

*Coregonicola orientalis* sp. nov. muscles of *Coregonus* spp., Lena, Yenisey rivers. Trud. Inst. Zool. Kiev. 4 1950 : p. 114, MARKEVITCH & BAUER 525.

*Paeon vaissieri* sp. nov. p. 161, figs., parasitic on *Sphyraena couardi* from W. Africa, p. 161, figs., *P. feron*, figs., Bull. Inst. fran<sup>c</sup>. Afr. Noire 16A 1953 : DELAMARE-DEBOUTTEVILLE & NUNES-RUIVO 216.

*Pharodes* sp., parasitic on *Blennius pavo*, figs., TUZET & ORMIÈRES 798.

*Ommatokoita* sp., fig., LÜLING 511.

*Rebelula bouvieri*, fig., LÜLING 511 ; *R. edwardsi*, figs., NUNES-RUIVO 598.

*Salmincola jacutica* sp. nov., pectoral fins of *Coregonus*, Lena, Yenisey rivers, Trud. Inst. Zool. Kiev 4 1950 : p. 113, MARKEVITCH & BAUER 525 ;

*S. yamame* sp. nov., parasitic on *Oncorhynchus mason* in Japan, J. Tokyo Univ. Fish 41 1954 : p. 75, figs., HOSHINA & SUENAGA 388.

*Sarcotaces pacificus*, figs., *S. komaii* sp. nov. pp. 176 & 183, figs., parasitic on *Peristedion amissus*, abyssal. Tosa Bay, Japan. Ann. Rep. Prefect. Univ. Mie Sect. 2, Nat. Sci. 1 No. 2 1953 : SHIINO 725.

*Sphyriion lumpi*, photo., LÜLING 511.

*Strabax monstrosus*, figs., NUNES-RUIVO 598.

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*Mycophilus roseus*, figs., GOTTO 310.

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†*Healdia* cf. *nitidula*, *H.* cf. *arkonensis*, figs., RABIEN 652.

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†*Sulcella australis* sp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954 : p. 206, pl. 2, figs. 19–21, KRÖM-MELBEIN 461 ; †*S. refrathensis* sp. nov. Devonian, Germany, Senckenbergiana 34 1954 : p. 252, figs., KRÖMMERBEIN 460.

†*Terquemia isosceles* p. 219, *T. vanveeni* p. 220, *T. hettangiana* p. 220, spp. nov. Lias, Italy, all figd., Mem. Carte geol. ital. 33 1954 : CONTI 184.

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†*Franklinella triangulata* p. 58, *F. multicostata* p. 60, spp. nov., both figd., Upper Devonian, Germany. *F. calcarata*, *F. torleyi*, *F. latesculcata*, figs., Abh. Hess. Landesamt. Bodenforsch. 9 1954 : RABIEN 652.

†*Maternella* subgen. nov. of *Richteria*, type species *R. dichotoma* Paekelmann. Abh. Hess. Landesamt. Bodenforsch. 9 1954 : RABIEN 652.

*Polycope cancellata* p. 84, *P. microdispar* p. 85, *P. limbata* p. 87, *P. arenicola* p. 89, *P. onkophora* p. 90, *P. longipes* p. 91, Naples, *P. ramosa* p. 93, *P. dimorpha* p. 95, *P. obtusa* p. 96, Naples, *P. elongata* p. 97, Sylt, spp. nov., all figd., Kieler Meeresforsch. 10 1954 : HARTMANN 335 ; *P. laevis* p. 175, *P. marci* p. 178, spp. nov. Brazil coast. Zool. Anz. 153 1954 : HARTMANN 336.

†*Richteria* (*Volkina*) subgen. nov. p. 108, type species *R. (V.) zimmermanni* (Volk.), figs., *R. (V.) laticostata*

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Aspidoconcha limnoriae gen. et sp. nov. on legs and abdomen of *Limnoria lignorum*, Beaufortia 4 34 1953 : p. 22, figs., Vos 828.

†*Bairdia ruggierii* p. 223, *B. postacutata* p. 224, *B. desiri* p. 224, *B.* (?) *proboscidata* p. 225, spp. nov. Lias, Italy, all figd., Mem. Carte geol. ital. 30 1954 : CONTI 184 ; †*B. singularis* p. 248, *B. saxifraga* p. 249, spp. nov. Devonian, Germany, both figd., Senckenbergiana 34 1954 : KRÖM-MELBEIN 460 ; †*Bairdia* spp. A. & B., figs., KRÖM-MELBEIN 461.

†*Bairdiocypris* sp. A., figs., KRÖM-MELBEIN 461.

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*Candonocypris deeveyi* sp. nov. Texas. J. Wash. Acad. Sci. 44 1954 : p. 145, figs., TRESSLER 794.

*Chlamydotheca texasiensis*, fig., TRESSLER 794.

†*Chapmanites* gen. nov. p. 202, type species *C. crassus*, near *Bairdiocypris*, *C. crassus*, p. 203, pl. 5, figs. 67–69, *C. lophotus* p. 203, pl. 5, figs. 63–66, *C. tectum* p. 204, pl. 5, figs. 70–72, spp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954, *C. sp.* A., figs., KRÖM-MELBEIN 461.

*Cypria lacustris*, fig., TRESSLER 794 ; *C. ophthalmica*, figs., ABRAHÁM, BENDÉ, HORVÁTH & MEGYERI 12.

*Cypricericus affinis*, *C. hirsutus*, descr. figs., JANČÁŘÍK 411.

*Cypridopsis hartwigi*, fig., MARGALEF 521 ; *C. newtoni*, figs., MARGALEF 522 ;

*C. phantomensis* p. 146, *C. musquensis*, *C. toyensis*, *C. potamis* p. 147, **spp. nov.**, all figd., Texas. J. Wash. Acad. Sci. 44 1954 : TRESSLER 794.

*Cyprinotus salinus*, *C. dentatus*, figs., TRESSLER 794 ; *C. salinus*, figs., KLEKOWSKI 444.

*Cypris pubera*, figs., SCHÄFER 700.

*Cyclocypris serena*, figs. of male, *C. drastichi* **sp. nov.** p. 4, figs., Silesia, Discussion of genus. Přírod. sborn. Ostrarsk. Kraje 10 1949 : JANČÁŘÍK 409.

†*Daliella americana* **sp. nov.** Silurian, Tennessee. Bull. Amer. Paleont. 34 (142) p. 13, figs., 1952 : MORRIS & HILL 572.

*Eucypris bispinosa*, figs., MARGALEF 521 ; *E. pagasti* **sp. nov.** Turkey, Publ. hidrobiol. res. Inst. Univ. Istanbul 1B 1952 : p. 19, figs., SCHÄFER 700.

*Herpetocypris caerulea* p. 21, figs., *H. agilis* p. 26, figs., **spp. nov.** Belgium. Bull. Mus. Hist. nat. Belg. 30 1954 : ROME 678 ; *H. pattersoni* **sp. nov.** Texas. J. Wash. Acad. Sci. 44 1954 : p. 145, figs., TRESSLER 794 ; *H. reptans*, figs., description, JANČÁŘÍK 410.

*Heterocypris turcica* **sp. nov.** Turkey, Publ. hidrobiol. res. Inst. Univ. Istanbul. 1B 1952 : p. 23, figs., SCHÄFER 700.

*Ilyocypris biplicata*, figs., KLEKOWSKI 444 ; TRESSLER 794 ; *I. brehmi* **sp. nov.**, Turkey. Publ. hidrobiol. res. Inst. Univ. Istanbul 1B 1952 : p. 8, figs., SCHÄFER 700.

*Laococon* **gen. nov.** p. 27 for *L. commensalis* **sp. nov.** p. 29, figs., Commensal with *Limnoria lignorum* from Curaçoa. Beaufortia 4 34 1953 : Vos 828.

†*Macrocypris eoceneata*, **sp. nov.** Eocene, New Zealand. Trans. Roy. Soc. N.Z. 81 1953 : p. 303, fig., HORNBROOK 386 ; *M. luganensis* p. 226, *M. uniformis* p. 226, *M. mucronata* p. 227, *M. gigantea* p. 227, **spp. nov.** Lias, Italy, all figd., Mem. Carte Geol. Ital. 30 1954 : CONTI 184.

*Mesocypris terrestris* **sp. nov.** Terrestrial, Knysna Forest, S. Africa. Ann. Natal Mus. 12 1953 : p. 359, figs., HARDING 327.

*Newsomites* **gen. nov.** p. 14, Bairdiidae. Type species *N. pertumidus* **sp. nov.** p. 15, figs., Silurian, Tennessee. Bull. Amer. Paleont. 34 (142) 1952 : MORRIS & HILL 572.

*Notodromas monacha*, multiple sex chromosomes, DIETZ 226 ; Italian cave, fig., STELLA & SALVADORI 752.

*Paracandona euplectella*, fig., ABRAHÁM, BENDER, HORVÁTH & MEGYERI 12.

*Paracypris zealandica*, fig., KEY 430.

*Physocypris perlata*, figs., ROME 678.

†*Pontocypris bolgiensis* **sp. nov.** Lias, Italy. Mem. Carte geol. Ital. 30 1954 : p. 223, figs., CONTI 184.

*Potamocypris fulva*, fig., ABRAHÁM, BENDER, HORVÁTH & MEGYERI 12 ; *P. maculata*, figs., MARGALEF 521 ; *P. smaragdina*, fig., TRESSLER 794 ; *P. steueri*, figs., MARGALEF 522.

†*Pseudocyproides* **gen. nov.** p. 15, Bairdiidae, Type species : *P. alatus* p. 16, figs., **sp. nov.** Silurian, Tennessee. Bull. Amer. Paleont. 34 (142) 1952 : MORRIS & HILL 572.

*Redekea perpusilla* **gen. et sp. nov.** Commensal with *Limnoria lignorum*, Beaufortia 4 34 1953 : p. 25, figs., VOS 828.

†*Spinobairdia* **gen. nov.** p. 11, Bairdiidae Type species : *S. kelletiae* **sp. nov.** p. 12, figs., *S. shidleri* **sp. nov.** p. 13, figs., Silurian, Tennessee. Bull. Amer. Paleont. 34 (142) 1952 : MORRIS & HILL 572.

†*Thlipsuroides thlipsuroides* **gen. et sp. nov.** Silurian, Tennessee, Thlipsuridae. Bull. Amer. Paleont. 34 (142) 1952 : MORRIS & HILL 572.

*Zonocypris inconspicua* **sp. nov.** figs., Publ. hidrobiol. res. Inst. Univ. Istanbul 1B 1952 : p. 27, figs., SCHÄFER 700.

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*Atjehella semiplicata*, fig., KEY 430.

†*Bradleya kaiata* **sp. nov.** Eocene New Zealand. Trans. Roy. Soc. N.Z. 81 p. 309, fig., HORNBROOK 386.

†*Buntonia radiatopora*, *B. r. sculpta*, *B. giesbrechti*, *B. g. robusta*, **subsp. nov.** p. 563, Pliocene, *B. sublatissima*, *B. s. dertonensis* **subsp. nov.** p. 565, Tortonian, *B. subulata* **sp. nov.** p. 568, Tortonian, *B. subulata rectangularis* p.

568, subsp. nov., all figd., Atti. Soc. Ital. Sci. nat. 93 1954 : RUGGIERI 688.

†*Bythocythere ferox* sp. nov. Oligocene, New Zealand. Trans. Roy. Soc. N.Z. 81 p. 307, fig., HORNIBROOK 386.

†*Caudites impostor* sp. nov. Eocene, New Zealand. Proc. Roy. Soc. N.Z. 81 p. 311, figs., HORNIBROOK 386.

†*Clithocytheridea plena* sp. nov. Jurassic, Germany, Palaont. Z. 28 1954 : p. 90, figs., SCHMIDT 703 ; *C. spinulosa*, fig., KEY 430.

†*Cytheralison amiesi* sp. nov. Oligocene, New Zealand, Trans. Roy. Soc. N.Z. 81 p. 306, figs., HORNIBROOK 386.

*Cytherera cryptisera*, *C. sp.*, figs., KEY 430.

*Cythereis hamata*, figs., HARTMANN 333 ; figs., Key 430 ; †*C. semi-contigua* sp. nov. Oligocene, New Zealand. Trans. Roy. Soc. N.Z. 81 p. 307, fig., HORNIBROOK 386.

†*Cytheridea ellipsoidea* var. *reducta* var. nov. p. 228, figs., Lias, Italy, *C. ellipsoidea*, figs., Mem. Carte geol. Ital. 30 1954 : CONTI 184 ; †*C. (Clithocytheridea) marwicki* sp. nov. Oligocene, New Zealand. Trans. Roy. Soc. N.Z. 81 1953 p. 305, figs., HORNIBROOK 386.

*Cytherideis sulcata*, fig., KEY 430.

*Cytheromorpha cacullata*, fig., KEY 430 ; *C. elongata* sp. nov. littoral, subterranean, Mediterranean. Vie et Milieu 4 1953 : p. 250, figs., HARTMANN 331.

†*Cytheropteron* (*Cytheropteron*) *decoratum* p. 83, *C. (C.) bispinosum* p. 85, *C. (C.) purum* p. 88, spp. nov., *C. bispinosum bispinosum* p. 85, *C. b. crassum* p. 87, subsp. nov. Jurassic, Germany, all figd., Palaont., Z. 28 1954 : SCHMIDT 703.

*Cytherura quadratorotundilis* p. 651, *C. quadridentata* p. 652 spp. nov., figs., Amphionian sand off Banyuls. Vie et Milieu 4 1953 : HARTMANN 333.

*Entocythere occidentalis* sp. nov. Commensal *Pacifastacus* spp. from Oregon. Amer. Midl. Nat. 52 1954 : p. 159, figs., KOZLOFF & WHITMAN 457.

†*Hemicythere packardi*, fig., KEY 430 ; †*H. parvitennis* sp. nov. Eocene, New Zealand. Trans. Roy. Soc. N.Z. 81 p. 310, fig., HORNIBROOK 386.

*Hemicythere scutellata*, fig., KEY 430.

*Leptocythere crucifera* p. 655, figs., *L. foveata* p. 656, figs., spp. nov. Amphioxus sand, off Banyuls. Vie et Milieu 4 1953 : HARTMANN 333 ; *L. demissa*, *L. inconspicua*, figs., KEY 430 ; *L. kaiata* sp. nov. Eocene, New Zealand, Trans. Roy. Soc. N.Z. 81 p. 306, fig., HORNIBROOK 386 ; *L. pellucida* fig. SCHÄFER 699 ; *L. petiti* sp. nov. Mediterranean étangs. Vie et Milieu 4 1953 : p. 709, figs., HARTMANN 334.

†*Limnocythere moubrayensis*, *L. scicula*, figs., HORNIBROOK 383.

*Limnocythere conifera* sp. nov. Tasmania. Pap. Roy. Soc. Tasm. 87 1953 : p. 70, figs. 9 a-g, BREHM 125 ; *L. sancti patricii*, fig., TRESSLER 794.

†*Loculicytheretta* gen. nov. p. 570, for *Cythere pavonia* Brady, *L. pavonia*, figs., Atti Soc. Ital. Sci. nat. 93 1954 : RUGGIERI 688.

*Loxoconcha baltica*, figs., SCHÄFER 699 ; *L. gauthieri*, figs., MARGALEF 522 ; *L. lilljeborchi*, fig., KEY 430 ; *L. tuberosa* sp. nov. littoral subterranean, Mediterranean. Vie et Milieu 4 1953 : p. 248, figs., HARTMANN 331.

*Microcythere subterranea* sp. nov. littoral subterranean, Mediterranean. Vie et Milieu 4 2 1953 : p. 239, figs., HARTMANN 331.

*Microloxoconcha* gen. nov. p. 245, for *M. compressa* p. 246, figs., the type species. Littoral, subterranean, Mediterranean. Vie et Milieu 4 2 1953 : HARTMANN 331.

*Nannocythere* gen. nov. p. 352, Cytherinæ, type species *N. remanei* sp. nov. p. 353, Helgoland. Hydrobiologia 5 1953 : SCHÄFER 699.

*Paracytheridea longicaudata*, fig., KEY 430.

*Paradoxostoma abbreviatum*, fig., SCHÄFER 699 ; *P. ornata*, sp. nov., off Banyuls. Vie et Milieu 4 1953 : p. 609, figs., HARTMANN 332.

*Payenborchella* (*Neomonoceratina*) *entomon*, figs., KEY 430 ; *P. (Neomonoceratina) koenigswaldi* sp. nov. p. 359, figs., Bay of Manila, Philippines, *P. (N.) entomon*, *P. (N.) mediterranea*, figs. Proc. Acad. Sci. Amst. 57B 1954 : KEY 430.

†*Protobuntonia numidica* gen. et sp. nov. (Trachyleberinae) Santonian, Algeria. Bull. Soc. géol. Fr. 63 1953 : p. 489, figs., CHEYLAN, MAGNÉ, SIGAL & GREKOFF 179.

†*Protocythere hayi* sp. nov. Eocene, N.Z. Trans. Roy. Soc. N.Z. 81 p. 305, figs., HORNIBROOK 386.

†*Quadracythere chattonensis* sp. nov. Oligocene, N. Zealand. Trans. Roy. Soc. N.Z. 81 p. 310, fig., HORNIBROOK 386.

*Trachyleberis goujoni*, T. *santigera*, figs., KEY 430 ; †*T. proterva* sp. nov. Eocene, New Zealand. Trans. Roy. Soc. N.Z. 81 p. 309, fig., HORNIBROOK 386.

*Xestoleberis aurantia*, figs., MARGALEF 522 ; *X.* fig., SCHÄFER 699 ; *X. delamarei* p. 241, *X. costata* p. 243, littoral subterranean, Mediterranean. Vie et Milieu 42 1953 : figs., HARTMANN 331 ; *X. margaritea*, figs., HARTMANN 332.

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Revision of Beyrichiidae, HENNINGSMOEN 355.

†*Aechmina paeckelmanni* sp. nov. Upper Devonian, Germany. Abh. Hess. Landesamt. Bodenforsch. 9 1954 : p. 166, figs., RABIEN 652.

†*Amphizonen asceta*, figs., KESLING 429.

†*Apatobolbina platygaster*, figs., HENNINGSMOEN 355.

†*Beyrichia bussacensis* var. *hispanica* var. nov. Ordovician, Spain, Publ. [alem.] extran. Geol. Esp. 7 1953 : BORN 99 ; †*B. (Eobeyrichia) zygophora* subgen. et sp. nov. p. 22, figs., Silurian, *B. (Velibeyrichia)* subgen. nov. p. 24, type species. *B. (V.) moodeyi* (Ulrich & Bassler), *B. (Neobeyrichia)* subgen. nov. type species *B. (N.) buchiana* (Jones) p. 25, figs., *B. (Nodibeyrichia)* subgen. nov. p. 26 type species *B. bronni* Reuter, *B. (Mitro beyrichia)* subgen. nov. p. 27, figs., type species : *B. jonesi* Boll., *B. (Eobeyrichia) paucituberculata* p. 37, *B. (E.) zygophora* p. 38, *B. (E.) osloensis* p. 39, *B. (E.) skienensis* p. 39, spp. nov., all figd., *B. (B.) cf. Kloedeni*, figs., *B. (B.) kloedeni bicuspis*, figs., *B. (B.)*

*kiaeri* sp. nov. p. 43, figs., *B. (Neobeyrichia) ringerikensis* sp. nov. p. 45, figs., *B. (Micrtrobeyrichia) cf. jonesi*, figs., all Silurian, Norway. Norsk. geol. Tidsskr. 34 1954 : HENNINGSMOEN 355.

†*Bolbina aff. minor*, figs., *B. tuberculata* sp. nov. p. 78, figs., Ordovician, Norway. Norsk. geol. Tidsskr. 33 1954 : HENNINGSMOEN 354.

†*Bolbia duplex*, figs., *B. accentuata* sp. nov., p. 99, figs., Ordovician, Norway, Norsk. geol. Tidsskr. 33 1954 : HENNINGSMOEN 354.

†*Chilobolbina* ? cf. *jonesiana*, fig., HENNINGSMOEN 354.

†*Coelonella bergica* sp. nov. Devonian, Germany, Senckenbergiana 34 1954 : p. 256, figs., KRÖMMELBEIN 460.

†*Cornikloedenia* gen. nov. type species: *Drepanellina ventralis* Ulrich & Bassler. Norsk geol. Tidsskr. 34 1954 : p. 31, fig., HENNINGSMOEN 355.

†*Craspedobolbina armata* p. 47, *C. dorsoplicata* p. 48, *C. expansinodata* p. 49, spp. nov., all figd., Silurian, Norway, *C. primativa*, figs., Norsk. geol. Tidsskr. 34 1954 : HENNINGSMOEN 355.

†*Ctenoloculina acanthina*, *C. negalia*, *C. thliberilobata*, figs., KESLING 429.

†*Dibolbina*, sp. A, figs., KRÖMMELBEIN 461.

†*Drepanella* ? sp. A, fig., KRÖMMELBEIN 461.

†*Drepanellina* ? sp., fig., KRÖMMELBEIN 460.

†*Entoprimitia nitida*, *E. splendens*, *E. kayseri*, *E. n. sp. aff. paeckelmanni*, figs., RABIEN 652.

†*Eobeyrichia* subgen. nov. of *Beyrichia* q.v., HENNINGSMOEN 355.

†*Eukloedenella ellipsoelloides* p. 209, pl. 2, figs. 28–31, *E. subquadrata* p. 210, pl. 2, figs. 32–34, *E. biconcava* p. 211, pl. 2, figs. 35–36 spp. nov. *E. spp. A & B*, figs., Senckenbergiana Lethaea 35 1954 : KRÖMMELBEIN 461.

†*Falsipollex valgus*, figs., KESLING 429.

†*Geisina victoriana* sp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954 : p. 212, figs., KRÖMMELBEIN 461.

†*Glossomorphites lingua*, figs., HENNINGSMOEN 353.

†*Halliella* ? *semilunum*, figs., HENNINGSMOEN 355.

†*Hibbardia lacrimosa*, figs., KESLING 429.

†*Hollinella devoniana*, figs., KESLING 429.

†*Jenningsina paffrathensis* sp. nov. Devonian, Germany. Senckenbergiana 34 1954 : p. 255, figs., KRÖMMELBEIN 460.

†*Jonesina* n. sp. aff. *puncta*, figs., RABIEN 652.

†*Kiesowia dissecta*, lectotype chosen, figs., HENNINGSMOEN 354.

†*Kirkbyina fragum* sp. nov. Devonian, Australia. Senckenbergiana Lethaea 35 1954 : p. 213, figs., KRÖMMELBEIN 461.

†*Kloedenella waratahensis* p. 207, pl. 2, figs. 22–24, *K. indistincta* p. 208, pl. 2, figs. 25–27, spp. nov. Devonian, Australia. Senckenbergiana Lethaea 35 1954 : KRÖMMELBEIN 461.

†*Laccochilina tarda* sp. nov. Ordovician, Norway. Norsk. geol. Tidsskr. 33 1954 : p. 94, figs., HENNINGSMOEN 354.

†*Mastigobolbina socialis* sp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954 : p. 224, pl. 3, figs. 38–39, KRÖMMELBEIN 461.

†*Mitrobeyrichia* subgen. nov. of *Beyrichia* q.v., HENNINGSMOEN 355.

†*Monoceratella bos* sp. nov. Ordovician, Norway. Norsk. geol. Tidsskr. 33 1954 : p. 102, figs., HENNINGSMOEN 354.

†*Monoceratina saxonica* sp. nov. Jurassic, Germany, Paläont. Z. 28 1954 : p. 96, figs., SCHMIDT 703.

†*Nanopsis nanella*, fig., HENNINGSMOEN 353.

†*Neobeyrichia* subgen. nov. of *Beyrichia* q.v., HENNINGSMOEN 355.

†*Neochilina parvula*, figs., RABIEN 652.

†*Octonaria laevilatata*, figs., KESLING 429.

†*Öpikella frequens*, O. cf. *umbiliculata*, figs., HENNINGSMOEN 354.

†*Öpikium porkuniensis* sp. nov. Ordovician, Norway. Norsk. geol. Tidsskr. 33 1954 : p. 82, fig., HENNINGSMOEN 354.

†*Parabolbina diensti*, figs., HENNINGSMOEN 355.

†*Platybolbina* cf. *plana*, figs. *P. tiara* p. 89, figs., sp. nov., *P. umbonata* p. 91, figs., sp. nov. Ordovician Norway, Norsk. geol. Tidsskr. 33 1954 : HENNINGSMOEN 354 ; †*P. tiara densistriata* subsp. nov. p. 53, figs. *P. lunulifera* p. 53, *P. (?) bulbosa* p. 54, figs. spp. nov. Silurian, Norway, HENNINGSMOEN 355.

†*Polyzygia* (n. subgen. ?) *beckmanni* sp. nov. Devonian, Germany. Senckenbergiana 34 1954 : p. 253, figs., KRÖMMELBEIN 460.

†*Primitia osloensis* sp. nov. Ordovician, Norway. Norsk. geol. Tidsskr. 33 1954 : p. 83, figs., HENNINGSMOEN 354 ; †*P. simplex*, fig., BORN 99.

†*Primitella* ? cf. *parallela*, figs., *P. bipunctata* sp. nov. Silurian, Norway. Norsk. geol. Tidsskr. 34 1954 : p. 56, figs., HENNINGSMOEN 355 ; †*P. cf. rara*, fig., HENNINGSMOEN 354.

†*Primitiopsis dorsoplicata* sp. nov. p. 61, figs., *P. cf. planifrons*, figs., Silurian, Norway. Norsk. geol. Tidsskr. 34 1954 : HENNINGSMOEN 355.

†*Rigidella erratica*, figs., HENNINGSMOEN 353.

†*Roundyella* ? sp., fig., KRÖMMELBEIN 460.

†*Signetopsis* gen. nov. p. 61, type species, *S. quadrilobata* sp. nov. p. 62, figs., *S. semicircularis*, figs., *S. malornata* sp. nov. p. 64, figs., Silurian, Norway. Norsk. Tidsskr. 34 1954 : HENNINGSMOEN 355.

†*Sigmobolbina* ? sp., figs., HENNINGSMOEN 354.

†*Tallinella primaria*, figs., HENNINGSMOEN 353.

†*Tetradella plicatula*, fig., HENNINGSMOEN 354.

†*Trepostellinae* subfam. nov. p. 33, HENNINGSMOEN 355.

†*Tricornina gracilis* sp. nov. Upper Devonian, Germany. Abh. Hess. Landes Bodenforsch. 9 1954 : p. 162, figs., RABIEN 652.

†*Velibeyrichia* subgen. nov. of *Beyrichia* q.v., HENNINGSMOEN 355.

†*Volkina* subgen. nov. of *Richterina*, type species *Richterina zimmermanni* Volk., Abh. Hess. Landesamt. Bodenforsch. 9 1954 : p. 108, figs., RABIEN 652.

†*Waldeckella* gen. nov. p. 149, type species *W. erecta* sp. nov. p. 152, figs., family uncertain, *W. ? turbinea* sp. nov. p. 154, figs., *W. materni*, figs. Upper Devonian, Germany, Abh. Hess. Landesamt. Bodenforsch. 9 1954 : RABIEN 652.

†*Zygobolba corbis*, figs., SIMON & DAHMER 739.

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†*Aparchites regularis* p. 195, pl. 1, figs. 1-3, *A. buchanensis* p. 196, pl. 1, figs. 4-6, *A. obliquus* p. 197, figs. 7-9, spp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954 : KRÖMELBEIN 461.

†*Conchoprimitia* cos sp. nov. Ordovician, Norway, p. 58, figs., *C. socialis* *socialis*, figs., *C. socialis vulgaris* subsp. nov. p. 61, figs., Ordovician, Norway. Norsk geol. Tidsskr. 33 1954 : HENNINGSMOEN 353.

†*Hemiaechminoidea* gen. nov. p. 7, type species *H. monocpinus*, Aparchitidae *H. monocpinus* sp. nov. Silurian, Tennessee. Bull. Amer. Paleont. 34 (142) 1952 : MORRIS & HILL 572.

†*Macronotella* cf. *praelonga*, figs., HENNINGSMOEN 354.

†*Schmidtella subfabriformis* sp. nov. Devonian, Australia, Senckenbergiana Lethaea 35 1954 : p. 197, pl. 1, figs. 10-11, KRÖMELBEIN 461.

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*Chydorus sphaericus*, figs., MARGALEF 521; PESTA 626; *C. sp.*, fig., HEMSEN 352.

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*Penilia avirostris*, distribution, figs., bioluminescence ? LOCHHEAD 506.

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†*Australolearia gen. nov. ashleyi* Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954: p. 1243, fig., NOVOZHILOV 597.

*Brachystheria orbiculata* sp. nov. river Tyoya, C.R. Acad. Sci. Moscow N.S. 95 1 1954: p. 160, fig., NOVOZHILOV 596.

*Caenestheriella crinita*, figd., N. Africa, MONOD 566.

†*Cyclolea asiatica* sp. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954: p. 1244, fig., NOVOZHILOV 597.

*Cyzicus tetracerus*, figs., nauplius, fig., BOTNARIUC & ORGHIDAN 111.

†*Dolicholearia asiatica* sp. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954: p. 1243, fig., NOVOZHILOV 597.

*Eocyzicus concavus*, figs. Review of N. American spp. of *Eocyzicus*, MATTOX 544.

*Eoleptestheria variabilis* nauplius, fig., BOTNARIUC & ORGHIDAN 111.

*Erisopsis impedita*, Barik, trib. of Ulug-Kem., *E. minusensis*, River Tyoya,

*E. ujukensis* Abakan, spp. nov., C.R. Acad. Sci. Moscow N.S. 95 1 1954 : p. 160, fig., Novozhilov 596.

†*Estheria anchietae*, figs., TEIXEIRA 771 ; †*E. (Euestheria) lerichei* p. 54, *E. (Euestheria) malangensis* p. 58, *E. (Echinesteria) marimbensis* p. 63, spp. nov. *E. (Euestheria) anchietai*, Karroo Beds, Permian, all figd. Ann. Jta. Invest. colon. Lisboa 5 4 fasc. 1 1950 : MONTA & MARLIÈRE 568 ; †*E. mangliensis*, *E. anchietae*, figd., Permian, TEIXEIRA 770 ; *E. mangliensis*, figs., TEIXEIRA 772 ; *E. spp. palaeoecology*, POPOV 645.

†*Estheriella moutai*, figd., Karroo Beds, Permian, TEIXEIRA 770 ; *E. moutai*, figs., TEIXEIRA 772.

*Euestheria consummata* River Tyoya, *E. hakassie* River Tyoya, *E. janovi* nr. Kizil, *E. twaensis* River Barik spp. nov. C.R. Acad. Sci. Moscow N.S. 95 1 1954 : p. 160, figs., Novozhilov 596.

*Eulimnadia oryzae* sp. nov. p. 3, figs., Arkansas rice fields, key to N. American species of the genus. Tulane Stud. Zool. 2 1954 : MATTOX 545.

†*Falsirostria* gen. nov. *Kazaclavium* spec. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1243, fig., Novozhilov 597.

†*Granirostria* gen. nov. *parvula* sp. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1243, fig. Novozhilov 597.

*Hemicycloleaiinae* subfam. nov. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1243, Novozhilov 597.

†*Hemicycloleia diseoidalis*, *H. satpaevi*, spp. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1244, fig., Novozhilov 597.

*Innadia voitestii*, figs., BOTNARIUC & ORGHIDAN 111.

†*Kaltanleaia differens* sp. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1244, fig., Novozhilov 597.

†*Leainella asiatica*, p. 1241, fig., *L. simorim* p. 1242, fig., *L. tsetrurubunurensis* p. 1241 spp. nov. Carboniferous, Kazakhstan, C.R. Acad. Sci. Moscow N.S. 96 6 1954, Novozhilov 597.

*Leptestheria dahalacensis*, *L. intermedia*, *L. dives* var. *securiformis*, figs., BOTNARIUC & ORGHIDAN 111.

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†*Nassagetes* gen. nov. *karagadensis* sp. nov. Carboniferous, Kazakhstan, C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1241, fig., Novozhilov 597.

†*Mimoleia* gen. nov. *asiatica* sp. nov. Carboniferous, Kazakhstan, C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1242, fig., Novozhilov 597.

†*Monoleiophiniae* subfam. nov. Carboniferous, Kazakhstan, Russia. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1241, fig., Novozhilov 597.

*Pseudestheria extrema*, river Tyoya, *P. fallax*, Barik, *P. simplex* spp. nov. river Tyoya, 1, C.R. Acad. Sci. Moscow N.S. 95 1 1954 : p. 161, figs., Novozhilov 596 ; †*P. longa* Novozhilov, sp. nov. Peruvian, Dnepr-Donetz depression, C.R. Acad. Sci. Moscow N.S. 97 3 1954 : p. 509, LAPCHIK 474.

†*Siberioleia* gen. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1243, figs., NOVOZHILOV 597.

*Sphaerestheria celsa* sp. nov. river Tyoya, C.R. Acad. Sci. Moscow N.S. 95 1 1954 : p. 161, Novozhilov 596.

†*Symmetroleia abayi* sp. nov. Carboniferous, Kazakhstan, C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1244, Novozhilov 597.

†*Taxartus* gen. nov. *sukhovi* spec. nov. Carboniferous, Kazakhstan. C.R. Acad. Sci. Moscow N.S. 96 6 1954 : p. 1241, NOVOZHILOV 597.

*Trigonesteria kohaiensis*, river Tyoya, *T. kysylensis* spp. nov. near Kizil, C.R. Acad. Sci. Moscow N.S. 95 1 1954 : p. 160, Novozhilov 596.

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*Branchipus stagnalis*, *B. intermedius*, figs., BOTNARIUC & ORGHIDAN 111.

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*Palpicephalus recticornis*, *P. brevipalpis*, figs., BOTNARIUC & ORGHIDAN 111.

*Streptocephalus auritus* var. *areva* var. nov. Iran. Publ. Inst. Biol. apl. 16 1954 : p. 122, fig., BREHM 128; *S. torvicornis*, nauplius figs., BOTNARIUC & ORGHIDAN 111; *S. torvicornis*, figd., N. Africa, MONOD 566.

*Tanyrnatrix motasi*, fig., BOTNARIUC & ORGHIDAN 111.

